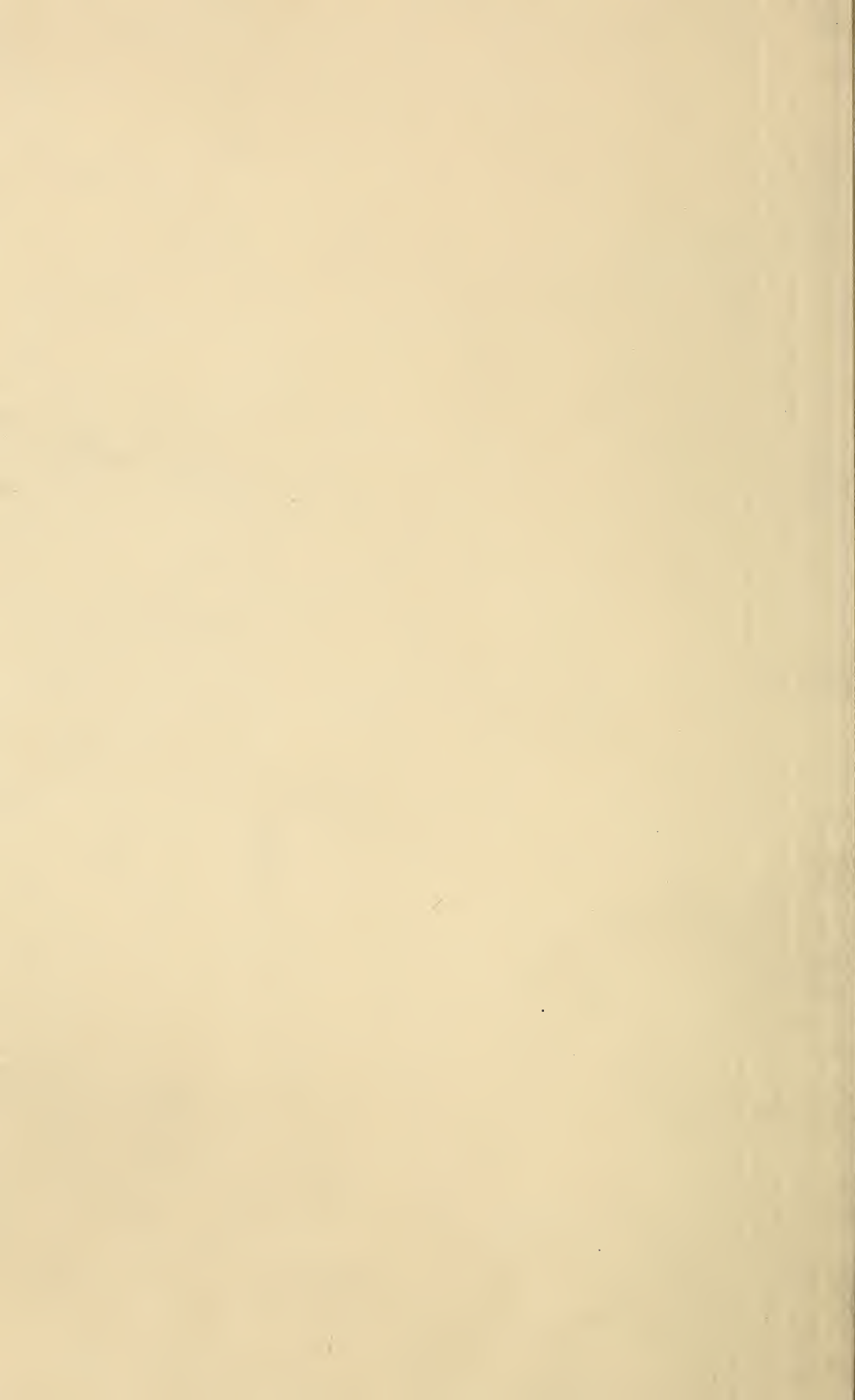
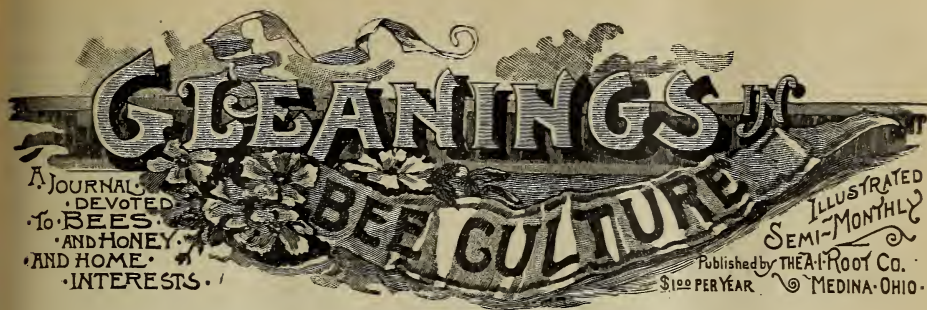


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VOL. XXVI.

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No. 5.



IZAL is the drug that *Bee Chat* feels sure may be relied on to cure foul brood.

WHAT AIKIN SAYS, p. 136, reminds me that one year two colonies stored white honey and all others dark. Last year, in the same apiary, a few stored dark and all the rest light.

FOR A TENDERFOOT our old friend C. A. Hatch hasn't done so badly in California—200 lbs. per colony from 275 colonies—the best report the *Pacific B. J.* has had for the year.

SOMNAMBULIST thinks, in imitation of the pink law for oleomargarine, there might be a pink or some other colored law for adulterated honey. [Somnambulist is right, as usual.—ED.]

POSTAL SAVINGS BANKS are getting much attention nowadays; and, from the general demand, they are likely to come. This country ought to keep up with the procession in having postal savings banks and free rural mail delivery. [Just so, doctor.—ED.]

TALL SECTIONS about 6x5x1½, four piece, were used long ago by Aikin, who says, in *Progressive*, "I want to tell every one who reads this that I never had such nicely finished sections of any other style." He thinks it important that top and bottom bars be about as wide their entire length as thickness of finished comb.

THE *American Bee-keeper* for February is a surprise. Diminished in size by knocking the foolishness off the last end, it is doubled in value by wide-awake editorials and other good matter that show that the brains of a live bee-keeper have been to work at it, instead of having it make itself. H. E. Hill furnishes the brains. [See editorials.—ED.]

BEE CHAT is the name of a new bee-paper in England, quarterly, edited by S. Simmins, the well-known author of "A Modern Bee-farm," and originator of Simmins' non-swarming plan, keeping the bees always building combs below brood-nest, but never allowing them to be finished there. One page is devoted to poultry. The first number is promising.

BOX HIVES and frame hives are not the only kind used in Germany. A. Gustin in *Rucher Belge*, favors for many the use of mixed hives—that is, a skep surmounted by supers with movable frames. An inverted cone is the form preferred for the skep, smaller at bottom than top, as bees cluster and prefer combs in that form. Undoubtedly a frame would be more easily handled if it were shorter at bottom than top.

QUESTION 2, p. 141, has an answer of only three letters. I'd have used only two-thirds as many. [So you would have stuck on the little word *no*. Well I have read over the question and my answer again, and I am of the same opinion still. But say, doctor, I am surprised that you did not catch me up in the answer just following, where I made that whopping mistake or error of fact. I said that there would be more dead bees on the cellar bottom during the *fore* part of the winter than the latter, when in fact I *meant* just the other way.—ED.]

CALIFORNIA B. K. EXCHANGE handled for the season 484,287 lbs. extracted honey, 21.8 per cent white, 51.4 per cent light amber, 26.8 per cent dark; 1467 cases comb. Total business, \$59,302—*Pacific B. J.* [Who said the California Bee-keepers' Exchange was a failure? Sixty thousand dollars in one year is not bad for the first year or so of its existence. We wish the Exchange success, and will do all in our power to encourage it. There ought to be such an organization in the East, and probably will be in time if the California Exchange continues to prove a benefit and a blessing to its members.—ED.]

FOR END SPACING of brood-frames, I thought I liked bent nails; but after trying staples I think I like them better. With nails the frames slide into place a little better, but then they slide out rather too easily. But any kind of end-spacing is a great comfort compared with the nuisance of having the end of the top-bar glued fast, unless in the course of time the end-spacers should themselves become badly glued. [Your conclusion gives me a lot of satisfaction. You remember we debated a long time (that is, members of The A. I. Root Co.) whether we should use a staple or a bent nail. I am glad your experience justifies the wisdom of our decision.—ED.]

PLEASE TELL US minutely, Mr. Editor, about getting section honey from two-story hives. I'm green with envy; doesn't seem to work right for me. Yet one season the only super of honey I got was from a two-story colony. [Now look here, doctor, after I have written all I have on the subject, told all I know about it, and perhaps more too, for you to *now* ask me to please tell you about it "minutely," is, well—adding insult to injury. What is it you want to know, or do not know? Please put on your specs, and read over, for instance, what I said on page 141.—ED.]

DAN WHITE is just right—no use trying to deny that the average sample of extracted honey doesn't begin to equal in quality good comb honey. If extracted-honey men want to keep up with the procession they must give up the figment that comb honey owes its higher price merely to its looks. All creation is ransacked to find plain sections, fences, and what not to make sections look better; and if half the pains were taken to make extracted honey taste better, comb-honey men would weep over the lessening of the gap between the prices of the two kinds.

"I HAVE WATCHED hundreds of bees as they came into an observatory hive, whose colony was at work in sections, and never saw a single loaded bee offer to go up to those sections." Thus says Doolittle in *Progressive*. According to that, wedging up the hive can make no difference about filling outside sections. [But why don't you go into the further question that Mr. Doolittle really touched upon, whether raising up the hive or increasing the depth of the entrance discouraged swarming, and possibly increased the amount of honey? I should like to see you and Doolittle lock horns again. I will furnish the arena, and here is the red rag.—ED.]

PLEASE OBLIGE ME, Mr. Editor, by calling in the entire edition of GLEANINGS, Feb. 15. Then knock out that "not" on p. 132, first column, 7th line from bottom, making it "I do know" that two or three comb nuclei winter well with a division-board between them. Have W. P. and Barney combined to make out I "don't know," even in the few cases I do know? [Just how that *not-y* word got into the circus without a ticket is one of those mysteries that perhaps we shall never unravel. One theory is that, from mere habit, our printers had got into the habit of saying "I don't know," and hence concluded that you meant to leave it in. Be that as it may, we regret its insertion, and will take warning to be more careful, if possible, in the future.—ED.]

I NOTICE, Ernest, that you and Hutchinson are going to go easy on correspondents' spelling. Good. I've long *wisht* you'd let things be *spelt* the way they *ot* to be *spelt*. [I wish both precedent and custom would permit us to spell by the phonetic method; that we might even go as far as Bro. York, in the *American Bee Journal*; but as we do so much printing for other parties, our printers and proof-reader would be in a snarl of confusion if we attempted to carry on the two systems—can't do it. But isn't *speld* a better word than *spelt*? To

use *past* for *passed*, and *must* for *mussed* destroys many a fine shade of meaning. Probably our only hope is in making a new alphabet, and then find somebody who can determine how "the English languij she is pronounct."—ED.]

BOARDMAN is with me for cleats instead of handholes, and now comes Doolittle in *Progressive*, and says, "After trying every thing by way of something to lift hives, I prefer the cleat to any thing else; especially where hives are carried to and from the cellar every fall and spring." He likes cleats $\frac{3}{8}$ square, one on each end. [I am half inclined to believe that you and Boardman are right; but keep this to yourself: We make the handholes because they are cheaper, take less room in crating, and because bee-keepers generally are satisfied with them. I suppose the fact is, the average bee-man does not lug his bees in and out of the cellar as much as you and Boardman do, and that is why he doesn't complain.—ED.]

GLEANINGS mentioned, p. 6, a record of 700 lbs. from Texas. Editor Hill, of *Am. Bee-keeper*, takes alarm at the shrinkage of 300 lbs. in that Texan report of years ago. Better reconsider, Ernest. But say, friend Hill, you've done still worse by awarding the belt to W. S. Hart for 1200 lbs. from two colonies. [When I spoke of that record of 700 lbs. on page 6 I could not quite determine in my own mind whether it was 700 or 1000. Rather than make the yarn too big, I thought it would be safer to take the lower figure, and so named it in my answer. Some years after the party reported that big yield, one or two of his neighbors, who claimed to know the facts, and who met me at one of the conventions, said the record was greatly "padded." Perhaps after all my 700 mark was nearer correct than the 1000 mark that you and Mr. Hill say was actually reported.—ED.]

PROF. COOK has riz up against sweet clover. Called to account by Editor York, he hardly seems willing to admit the testimony of those who say it's valuable for forage—thinks stock must have been starved to it, or else exceptional soil or conditions gave exceptional quality. Yes, but there's such a lot of exceptions. [My, oh my! where has Prof. Cook been these years? If he will come out east again and call upon friend Boardman, and a dozen others I could name, at the right time of year, he will find that stock often prefer it to other fodder. The Ohio Experiment Station once opposed the clover, but has now taken back all the bad things it said of it, and actually favors its introduction. Notwithstanding we see miles of it growing like weeds along the roadside, it certainly has proved to be a great blessing, because it grows where nothing else can live. It is true, very many regard the clover as a noxious weed; but that does not prove that it is. In some parts of the West there are hundreds of acres of it grown, and hundreds of tons of it cut for fodder. Where nothing else grows it is a Godsend. I should almost as soon expect to hear Prof. Cook say the world is not round as to argue against sweet clover.—ED.]



SCALE-COLONY RECORDS ANALYZED.

How Colonies are Affected by the Flow, whether Free or Scant; Wax Secretion; Comb and Extracted; Comparative Yields. Some Interesting Results.

BY R. C. AIKIN.

For several years my honey-flows have been poor. My average yield in 1896 was 10 pounds or less; 1895 and 1894, somewhere about 20 to 25 pounds. The 1894 flow extended over a period of 47 days, showing a gain of 70 pounds. This was not a net gain of ripened honey, the total being obtained by adding the daily gains, which, of course, would shrink much in process of ripening. One day only did the gain reach the 6 pound notch; and the two next best days, $4\frac{1}{2}$ each.

The flow for 1895 lasted 27 days, making a gain of 70 pounds as against the same number of pounds in the 47 days the preceding year, while in 1896 the time was 26 days with a total gain of 53 pounds. Notice that the 1894 flow gave a total gain of 70 pounds, but was extended over a period of 47 days, very few of those days going over 3 pounds, the whole average being only about $1\frac{1}{2}$ per day. This gave very unsatisfactory super work. While the surplus was not far from 20 pounds, it came in so slowly that even strong colonies could scarcely be induced to work sections, many colonies not doing any thing in them.

I want here to call attention to the effect of such a flow on different colonies. First compare two general classes — those for extracted and those for comb. The extracted-honey colonies having full sets of combs and free access to them, the storing would be done largely in the extracting-combs, the brood-combs thus relieved of pressure being filled with brood. The limited quantity of honey coming in, together with the great amount of bees and surplus room, brings about a condition favoring not only a less number of combs containing honey in the brood-chamber, but also a thin, lank, or lean condition of these combs. Just see how easy it would be for a beginner to get almost the entire gatherings of a colony into the surplus; and the smaller the brood chamber the less honey left in it. Here, then, are two important factors that ought not to be lost sight of, though usually they are overlooked; viz., the great amount of brood and the leanness of the combs, because there is nothing to induce close filling, there being abundance of room above.

The comb-honey colony has a very different condition to contend with, sections being given with starters only, or full sheets of foun-

dation. The inducement to occupy surplus arrangements may be summed up in this order: First, ready-built combs; second, large sheets of foundation as in extracting or brood frames; third, sections with full sheets of foundation; and fourth, sections with starters only. If honey is coming in we may expect a reasonable secretion of wax; yet the flow being so very light there is very little inducement to start comb-building in a new place. There is, however, plenty of wax secreted to build any comb needed; but the outlook being so poor, this wax is used in lengthening the cells in the brood-combs rather than building in sections, so the light daily gain is crowded into the brood-combs.

There, friends, don't you see how easy it is to get surplus extracted when you would not get surplus comb honey, or that your extracted may exceed in quantity your comb, even though not one pound more was gathered by those run for extracted over those run for comb? This brings in the question of wax secretion and cost of comb-building — a question upon which I am found upon the minority side. I am not prepared to make a positive statement that wax secretion is either voluntary or involuntary; but I suspect that it is a little of both. I believe (and think I know) that wax is secreted when there is a prospect of its being needed, and always more or less at all times when honey is being gathered.

In that 47 days' flow in 1894, where the average daily gain was just about $1\frac{1}{2}$ pounds, I did get more extracted per colony than comb, but also starved a lot of the extracted-honey colonies in winter, and had to feed many hundred pounds in spring. The comb-honey colonies could scarcely be induced to work in sections, except where bait-combs were. I put bait-combs in many supers, some in the center, some in the corners, some on one side, and some on one end. No matter where I put the bait-combs in the super, they (and usually they only) were filled.

I have been making comparisons as of one apiary or part of an apiary run for extracted, as against a similar lot run for comb. The work of individual colonies will, however, somewhat modify the results. If a colony run for extracted be very weak, or if the queen from any cause does not lay freely during the flow, the disposition will be increased to put honey into brood-combs. Hence it will be seen that a very strong colony with a vigorous queen laying freely during the flow may occupy sections, and store there. I have seen such cases, once the colony being started in the sections, almost the entire amount of stores gathered being put into the sections, while beneath was a great mass of brood, which proves my theory that there is no lack of wax secretion with which to build the comb; but the gain, being very slow, will not induce a disposition to comb-building. The same colony run for extracted would have the same conditions in a greater degree. With these very slow honey-flows it is almost impossible to induce bees to build comb, hence the great tendency to store in brood-nest when store-combs are not given.

Now consider the 1895 flow. The gross gain was the same as in 1894—70 pounds; but instead of being 47 days in gathering, it was only 27, the former being about $1\frac{1}{2}$ per day and the latter about $2\frac{1}{2}$. With this flow the super work was better. More new comb was built in sections than the previous year, though there was less time in which to build it. The finish was also better. The slower flow gave more time to edge in and crowd brood, more time for thorough ripening, hence less room needed in which to store, so less put in supers. In the rapid flow, besides the condition of increased bulk because of unripe honey, less opportunity was given to store in brood-combs vacated by hatching bees, and the greater number of loaded bees in each other's way, a greater degree of activity, and, perhaps, an increased wax secretion. Such conditions induce better super work, but put less honey into the brood-combs.

The flow for 1896 was 53 pounds in 26 days—an average of 2 pounds per day. Now, 53 pounds of nectar would not equal more than perhaps 40 pounds of the ripened honey, or but little more than enough to fill the brood-chamber. Nectar gathered at the rate of 6 or 8 pounds per day would evaporate even more than the above estimate; and so, I suppose, would also that gathered in damp weather or in more moist climes. I think that, with one exception, this was the poorest yield I ever had, and the poorest by all odds since locating in this State, eight years ago. I reduced the number of comb-honey colonies, and took a little honey; also took a little extracted, but would have had more bees last spring if I had not taken a pound.

The 1897 flow was the best for several years. My records of this are more complete in details, and also much more fresh in memory. There were two flows. The first was from alfalfa, from about June 12th to July 13th; the second, clover and sweet clover, beginning about August 1st, and continuing about three weeks. The alfalfa flow filled my brood-combs and well nigh half of my crop of surplus. I say *filled* the brood-combs, which is strictly true, because I unqueened; and as the brood hatched, the combs were sure to be filled. The first flow was the longest and the freest, giving about $\frac{2}{3}$ the entire gain of both flows. The beginning of the second flow came just about with the beginning of the laying of the young queens; so between the moving-up of honey to make room for brood, and the honey coming from the fields, the super work in the second flow was greater than in the first. The movement from the brood-chamber even finished sections when the flow had practically ceased.

Putting the two flows together I had about a 55 days' yield, and very close to a 2 pounds a day average. My crop of surplus was about 45 pounds average—about the same whether comb or extracted. This flow showed several days that were good. Two colonies were used, and I have averaged on the basis of two. One did much better than the other—a matter I shall discuss in another connection; but considering that the two were used in these

estimates I think the results more conclusive than in the preceding years when only one was used. The best colony showed in succession two days a seven-pound and two days a six-pound gain, the greatest single day's gain. The average daily gain was about 2 pounds, few days exceeding 3 to 4 pounds.

The records were made by weighing night and morning. A 5-pound gain would shrink over night 1 to $1\frac{1}{2}$ pounds; hence had I weighed only each evening my record would not be so accurate as by the method pursued. The bees were rarely out more than 10 to 11 hours a day, many times not more than 9. I said my average of surplus was about 45 pounds. The average gain being about 2, and the number of days' duration 55, the total gain would be 110. Supposing the evaporating to be $\frac{1}{3}$, I should have left almost 30 pounds per colony for winter stores. If $\frac{1}{3}$ did truly represent the shrinkage, a large part of that shrinkage took place between the morning and evening weighings; hence we can not get rid of some discrepancies. I should judge that the actual total gain would be considerably above the figures given, so that the actual stores left with the colonies were very near 40 pounds.

Here I want to call attention to a point prominent in this investigation; and that is the fact that it requires a flow of three to four pounds per day to give good work in sections, and more especially in the hands of any but an expert. The best average yield I have taken in recent years was 150 pounds per colony. Adding to this the winter stores, say 25 pounds, would make 175 pounds of ripened honey per colony. Allowing $\frac{1}{3}$ for evaporation, the average daily gain of nectar must have been not less than $4\frac{1}{2}$ pounds, for it was gathered in about 50 days. I weighed through the greater part of that flow, and know the gain was as much as 8 or 10 pounds some days, and I regret that I did not preserve the record.

Loveland, Col.

THE HONEY MARKET.

Selling Produce around Home, or Shipping it to a Commission House; Organizing a Honey Exchange for York State; would Niver be the Proper Man to sell the Honey? the \$1000 Reward on Shipping-cases.

BY FRIEDEMANN GREINER.

It may be all true enough that the professional honey-producer is to some extent to blame for the prevailing low prices of honey; but what can we do to remedy the trouble? that's the question. While I do not think the price of honey has come down any more than the other products of the soil, still I do wish, from the natural standpoint of selfishness, that honey would bring us more money. But it must be borne in mind that, through the division of labor, through specializing of the different twigs and branches of industry, much good has been accomplished. Mr. Terry has made a wonderful success of farming for his three products; viz., wheat, clover, and pota-

toes; the grape-grower specialist supplies the market more cheaply than the farmer dabbler in every thing did years ago. In the manufacture of any kind of goods, bee-keepers' supplies included, the same holds true. Large factories, for instance, are turning out "wagons" at a price astonishingly low—so low, in fact, that the mechanic of small means can not compete any more. Specializing helps to cheapen any product, honey included. It seems to me that all of this has been an advantage, a blessing, to the consumer.

If Morton's brother-in-law and Mr. Abbott are such good salesmen of honey they ought to go into that business and let the production of honey alone.

It seems to me that it might be a beneficial institution if all honey could be gathered at certain different centers, from which a well-directed distribution might take place. The people would also learn to know these places, and come there to buy. The commission houses furnish such centers now, though in a very imperfect manner. But since I do not see any thing better at present, I confess I do not know what I should do without them.

I ship, each year, produce of a variable character, such as beans, poultry alive and dressed, capons, calves, honey, etc., and I have little fault to find with the commission man. I need him. Mr. Elwood needs him. The A. I. Root Co. seems to need him.

It is, perhaps, a foolish notion of mine; but I sometimes flatter myself that I can produce a pretty fair grade of honey, at least in a favorable season; but I have long been convinced that I make a very poor salesman. It requires a ready tongue in the first place—a quick and inventive mind; it may also be a help sometimes to be able to stretch the truth a little bit in order to effect a sale. I am not built that way, I know, and so I don't propose to go into the business. Let me tell you here a bit of my experience in selling honey.

It was about 12 years ago. I had but a small crop of honey—I think about 600 pounds from over 100 colonies. I started with this honey from Clark Co., Va., for Washington, intending to sell for cash at 14 cents per pound. My honey was nice blue-thistle honey, which always commands a good price. It had been carefully graded according to finish and weight. All of it was exactly of the same shade, not unlike my clover honey here at the North. With sample sections in satchel I spent two whole days trying to effect sales of my immense crop. My jaws fairly ached when the second day drew to its close; but the greater part of my honey was still unsold. I was what I called quite successful with one man, selling him six cases at 14 cents. But after he had paid me the price agreed upon he spoke somewhat like this: "Now, my good honey-man" (he evidently did not know my name was Friedemann), "I want you to understand that I am not fooled, but that I take your honey for what it is, not what it is represented by you. I find no fault with it; it is very nice; my customers will eat it, and be well pleased with it; but—your honey is an imitation, just the same."

Well, well! I tried to gather together my scattered wits, and I brought all my available stock of eloquence to bear upon the man. The environment developed an eloquence I had no idea I ever possessed. My jaw nearly ran away with that which is supposed to be located a little higher up; but all was of no avail. I showed him the traces of propolis on the otherwise clean sections. He replied: "Oh! they are clean enough." I spoke of the want of exact uniformity in the make-up of the different combs. I said, "If my honey had been manufactured by machinery, as you say it is, all the combs would be exactly alike; if you will find me just two sections that are alike in every particular you may have the lot;" but his reply was, "Your honey is uniform enough." Said I, "It is very unlikely that a firm manufacturing such goods as these would send out such a greeny as I am to make sales for them." I actually offered him \$10.00 for a pound of truly manufactured comb honey, of which he said he had handled large quantities; but on investigating he could not give me the firm of whom he had bought. Nothing, however, seemed to bring the man down, and I had to give him up as a hopeless case. I had not heard at that time of the A. I. R. \$1000 offer; but later I sent him the statement, to which he has not replied, nor has he claimed the \$1000 reward. At last I came to the conclusion that it was not a paying job for me to try to sell my honey. So I left the rest of it with a commission house, which made satisfactory returns soon after, and up to this day I am dealing with the same party.

Now, right here I want to ask you, Mr. Editor, would Mr. A. I. R. object to having his \$1000 offer used indiscriminately by us honey-producers? It might be printed on a slip of paper, and thus pasted on every crate we are sending out. In view of the fact that this story of manufactured comb honey is still afloat, do you not think that, to act on this suggestion, would have a tendency to counteract the bad effect of it? And, if Mr. A. I. R. has no objections let us know what the price will be of such slips by the hundred.

Another suggestion I want to make. Since it can not be disputed that but few people outside of the professional honey-producers understand how to handle comb honey, I believe it would be a good idea to let proper directions for handling honey in comb go with each honey shipping-crate. Such directions might be printed right on the sheet of paper commonly placed on top of the crated sections, or printed on a separate slip, and placed on top of the sections before adjusting the crate-cover.

The now advocated veneering partitions to be used in shipping-crates will, of course, be a decided help to the retailer; but I think he needs the instructions also. I am very much taken up with the veneering for the above-mentioned purpose, and shall ship no more honey without them, although I consider them unnecessary as a means to prevent broken-out combs doing damage to other sections in the transit. Frail honey, likely to break out by

rough handling, should not be shipped, but kept for the home trade or home use.

Mr. Niver says in a late issue of GLEANINGS, that he successfully sold the honey of six producers last season. Good! and what I should like to see done is this: See him hired by the bee-keepers of New York to sell all the honey they produce next year. This might be more of a task than one man ought to undertake; but I should like to see it tried. I promise to join the company. To sell in the home market? and that in the honey State of New York? A doubtful undertaking! I have not the time nor the patience nor the gift to retail my honey, even if the prospect were such as to guarantee good pay for the time spent.

The grocers in my town sell honey, very fine honey at that, at less than what my crop netted me sold by commission houses. I should be obliged to buy up all the honey in my vicinity—good, bad, and inferior, get a monopoly on it (and that wouldn't suit Doo-little), before I could raise the price.

I have exhibited at our annual fairs, for many years past, always making a creditable attractive display, exhibiting in flint-glass jars, jelly-glasses, cans, and fancy comb. I have talked bees and honey on these occasions till I was hoarse, often having great crowds around me; but I never have sold five-dollars' worth of honey in all the time I have attended fairs.

I have advertised in the local papers, have sweetened the editors, donated to the preachers, and have given away ever so much otherwise; but in the development of my home market I have made a complete failure, and the commission man seems to be my only rescue. I should be very glad to find cash buyers for my yearly output, and I am sure others would too.

Naples, Ont. Co., N. Y., Jan. 15.

[Mr. Greiner has touched upon a number of things that deserve more consideration than they have hitherto received. Selling to a good commission house has its advantages, but it is possible honey would bring more if sold through a salesman. In the first place, very few good honey-producers would be good salesmen. It naturally follows, then, that the man who can produce the honey, but who is a poor seller, should employ the skill of one who can do the selling to the best advantage. Obviously enough, one honey-producer can not alone afford to employ a man to sell his crop. Mr. Greiner's suggestion, then, that the bee-keepers of York State choose some man to sell honey for a number of bee-keepers, is a good one. To make this scheme feasible, a sort of honey exchange would have to be formed; and it occurs to me that the Seneca, Ontario, and Tompkins Co. Bee-keepers' Associations should amalgamate into a sort of honey exchange, with a constitution broad enough to take in bee-keepers from all portions of the State who might wish to join on payment of a certain fee.

Whether this plan would be feasible or not I can not say; but those three county organizations are made up of a lot of live hustling

bee-keepers, of whom Niver is a worthy sample—certainly a good salesman from what I hear.

Well, if the York Staters wish to consider it we will hold our columns open for further discussion.

Yes, we will permit the use of the \$1000 reward card; but before it is put in form for a general label or sticker it ought to be revised and brought up to the present time. I do not know that it would have to be changed very much; but its use should be made to cover the present exigencies of the times. As to what else should be put on a shipping-case is another question. I know of no man more competent to deal with this matter than Mr. Elwood. If he will prepare copy for a sticker, telling how to load the honey, etc., we will submit it to our readers; and if it receives general sanction we can, if desired, print it in the form of a sticker and sell it at a price within the reach of all.

We have sold for years a sticker printed in red ink and bold-face type, telling how to load the honey, and general directions regarding its care. It reads as follows:

FRAGILE!

— COMB HONEY —

Handle With Extra Care.

Do not Move it on Hand-Trucks.

Do not Drop it.

Do not Dump it.

Set it down Easy.

Haul only on Vehicles with Springs.



Load with the finger pointing to the Bow, Locomotive, or Horse.

Now, brethren, the subject is open for discussion. Fire in your suggestions.—ED.]

NOTES OF TRAVEL AMONG BEE-KEEPERS OF YORK STATE.

Coggsball's Apiary; His Methods of Work.

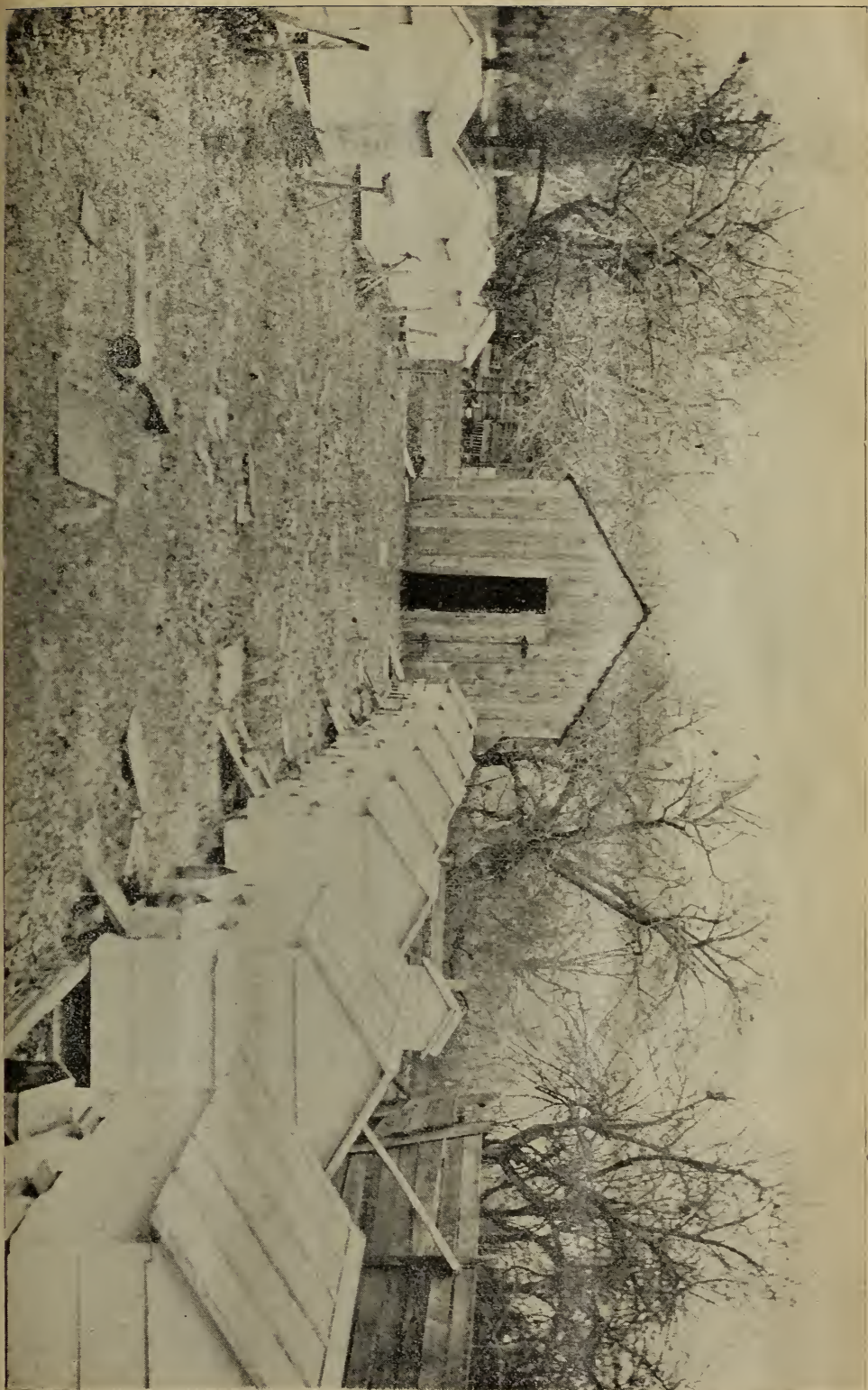
BY E. R. ROOT.

By reason of a crowd of work, and also on account of the crowded condition of our columns, I have been obliged to discontinue for a while my notes of travel among the bee-keepers of York State. I do not know exactly where I left off; for, instead of giving my notes in chronological order, I have taken hops, skips, and jumps.

W. L. Coggsball, as I have before told you, is one of the most extensive bee-keepers of New York, and who, as I have also stated, runs over 1000 colonies in some nine different out-apiaries. Since I left his place I have heard he is buying up more yards, and is going in heavier than ever. I do not dare tell you in tons how his crops of honey run from year to year; but I will tell you something of his methods.

I have before stated that Mr. Coggsball is wedded to no particular hive; but he does have a system, and a very thorough one, under which all his work is done, and by which his marvelous results in dollars and cents are secured. I have already shown you a view of one of his apiaries, and also a view of his beautiful home—the latter built and paid for entirely out of the proceeds of the bees.

ONE OF W. L. COGGSHALL'S TENEMENT-HIVE OUT-APIARIES.



The first yard that I visited (I do not remember the name of it now, for he has a name for every one of his apiaries) is located an eighth of a mile, perhaps, from any road-way, and a quarter of a mile from any house, right in the midst of a big thicket of wood. On arriving at the place, there was that high-keyed hum as if robbing were going on; and, sure enough, bees were prowling around numerous cracks in the honey-house, going in and out. Unlocking the door and going inside, we found that bees had gotten into the bunghole of a half-barrel of buckwheat honey. At the time of our visit the barrel was nearly empty. Over each bunghole had been

says, to go to the expense of constructing a bee-proof building. It is made of cheap lumber, and so constructed that if, for any reason, he desires to move the yard from ground that is leased or rented, the building can be taken down, loaded on a wagon, and be set up in some other location. The cracks and crevices—what does he care for them?

The hives at this particular yard, I think, were some he bought of some one else, who could not make the bees or the location pay; but let me tell you when W. L. C. gets hold of the bees they have got to do some hustling—or rather, I should say, he and his men do the “hustling” and the bees “do the rest.”



HARRY HOWE, AND COGGSHALL'S TENEMENT HIVES PREPARED FOR WINTER.

placed little strips of wire cloth to allow the honey to evaporate further if it would; but somehow the wire cloth had become displaced, and the bees were making things “interesting.” Most of us would have become considerably excited, and would have made apologies for such a condition of things; but Mr. Coggs shall took the matter very coolly, remarking, “Never mind; I will get the honey all back just the same.”

Some of you may wonder why he uses honey-houses all full of cracks and crevices, through which the robbers might pass. Simply for the reason that it does not pay him, he

After spending a little time at this yard we drove to another, which was more after the style of the one in the engraving herewith presented, being in the open. The boys had preceded us, and were getting ready for extracting, as Mr. C. wished to show me his method of working. I was supplied with a veil, and it was well that I was. The boys had already mopped out the floor, gotten every thing in readiness, and were just preparing to extract as we arrived. The buckwheat-honey flow was about over, and I expected that robbers, of course, would make things lively. But that did not make any

difference. The boys went at it just the same. With hands in pockets (to tell the truth, I did not like to have them anywhere else), with a heavy bicycle sweater on, knickerbockers and golf stockings, I felt reasonably sting-proof.

Now for the extracting, or, rather, getting combs ready, preparatory to extracting. A sort of hand-cart large enough to hold four supers, each eight frame L. size, was stationed just at our rear. In one corner of the hand-cart was placed an empty super. Observe this point, for I shall have occasion to refer to it again. Next, the cover of the hive was removed. The quilt was pulled up a little way, and smoke blown under. The quilt was then flopped up and down between each alternate puff of smoke, in such a way as to suck or draw the smoke down into the super, almost to the brood-nest below. This flip-flop act was continued for a space of perhaps half a minute, when I should judge that at least two-thirds of the bees were driven into the brood-nest below. I will remark, in passing, that the bees can not be driven out with smoke with the smoker alone nearly as well as when the smoker and quilt or cloth are used in the manner stated. As this method was described on page 700 I will not go into it fuller now.

Well, when two-thirds of the bees are out of the super the first frame is taken out and shaken in front of the entrance. It is then put into the super on the hand cart that I have already referred to. The next frame is grasped by the two projections at the end; and while in a horizontal position, and before it is out of the hive, it is given three or four rapid shakes up and down in the hive. It is true, a bee or two may be killed, but that makes no difference. The next frame is shaken in the same way *in the hive*; and if there are a few bees still clinging, they are brushed off from the comb with a long whisk broom that is tied to a short string around the waist of the operator. One sweep with Coggsall's broom on a side will usually finish up the job. This operation is repeated with each frame, shaking it in the super, not on the ground, until all the combs are freed of bees, when it is placed in the super on the hand-cart. During all this time the operator will use the brush perhaps once or twice, as he seems to be able to remove nearly all the bees by simply shaking.

The super that is on the hive now empty of combs is yanked off, sometimes kicked off,* during which operation it is freed of all adhering bees. It is then set on the hand-cart, and the next hive is gone through with in the same manner—that is to say, the combs are taken out and put into the super that was on the hive first opened, but now on the hand-cart filled with combs from which the bees were cleaned. The super now empty on hive No. 2 is kicked off and set on the hand-cart, and filled with combs from hive No. 3 in the manner before described. In this way the

operator goes through the whole yard. As each hand-cart is filled with supers it is drawn over to the house where the boys are extracting, unloaded, and set before the next hive to be opened. The super that was kicked off from the last hive opened is set on the hand-cart, and so on the work of smoking, flip-flopping, and shaking of the frame goes on.

Well, by this time things got to be interesting, if not exciting. My hands went deeper into my pockets, while the stings went deeper into my clothes. In the mean time Mr. Coggsall had a kettle of rotten wood and rags, and was making a most awful smudge at the door of the honey-house. The smoke would rise and curl up, and come out of the openings of the building, the purpose of which was to keep robbers from getting in. Mean time the robbers were poking their noses into the combs outside that had been set into the supers preparatory to being extracted. But that made no difference. The combs were rushed into the house and extracted, bees and all.

"Did the bees sting?" you ask. Sting? I never saw them prod worse; but the men worked on just as though they were mere flies, or bees without stings. Combs were taken from the hives, rushed to the extracting-house with a celerity that was simply astonishing. I would not have supposed it possible to do such work in an apiary where the air was literally full of buzzing, mad, stinging bees. Mr. C. and his men are evidently used to this plan, and certainly do get the honey out of combs at a pace that is simply record-breaking. The men work so rapidly, flip-flopping smoke, shaking combs, that a bee scarcely has time to land its sting on the hands. Did you never notice that, to sting, a bee must take time to get a "good holt." Coggsall's men, for more reasons than one, don't give the bees time to get much of a "holt." The man who opened the hives worked bare-handed; I should have thought he would have had them filled with stings; but I don't think he received more than a *dozen*, all told, in his hands; but that was nothing.

I will not attempt now to tell you how many thousand pounds two of their men will take out in a half day or day. In the first place, I have forgotten what the record was; and in the second place, if I were to tell you I doubt whether you would believe it; and I could hardly credit the figures myself till I saw the men work.

In our next issue I will tell you something of Mr. Coggsall's method of extracting; the kind of extractor he uses, the sort of kegs he finds best adapted for storage and marketing.

The smaller engraving shows a view of one of the tenement hives dissected, and as it is prepared for winter. Each hive contains, I believe, eight colonies.

Harry Howe, one of Coggsall's "lightning operators," stands with smoker in hand.

When visiting at Mr. Coggsall's my photographic film gave out. After reaching home I reloaded the camera and sent it back to Groton, and Harry pressed the button. These and other views that I shall present in our next issue are his "shots," not mine.

* Mr. Coggsall does not believe in taking time to pry the super off. A *yank* or a kick removes it, and clears it of bees beside. Of course, it angers the bees; but Mr. C. considers that of small moment compared with the time. He runs his bees, not for convenience, but for the dollars and cents; and if a kick will earn another cent or two he "kicks," stings or no stings.

VARIOUS MATTERS.

Queens Laying on Side of Comb Furthest from Brood.

BY G. M. DOOLITTLE.

I chanced to pick up the August 15th GLEANINGS, 1897, a day or two ago, and in glancing over Stray Straws my eye fell on this: "Did you ever notice that, in enlarging the brood-nest, the queen often lays first on the side of a fresh comb furthest from the brood-nest? I wonder why." And the editor adds, "I never noticed it."

Why my eye chanced to fall on this was that, in reading the matter before, I had marked the place with a leadpencil, in such a way that it told me I was to say a few words in the matter, for GLEANINGS. So, here goes although nearly six months have elapsed since I should have written what I had to say.

I was very much surprised that Bro. E. R. Root had never noticed this matter, for it was one of the things I noticed away back in the early seventies, when nearly every one was advocating the spreading of brood to stimulate colonies; and as I was also advocating the same thing in print, I expected that this thing would be hurled back at me to prove that the theory of having all eggs laid in the center of the brood-nest, where it is the warmest, was wrong, because, according to nature, the eggs were nearly always laid on the outside of the brood which the bees had. Well, I have not the time nor the disposition to go over all the ground in this matter now, but will say that, at all times when the bees are enlarging their brood-nest rapidly, and when pollen is also coming in rapidly, the first eggs laid in any comb near the brood, but so far not containing brood, are laid in the cells of said comb on the side furthest from the brood, the queen going clear around the comb to this furthest side to lay the first eggs, instead of laying them in this new comb right opposite the brood in the comb already occupied. If I have noticed this once, I have a thousand times, and for a long time wondered why it was so, as did Dr. Miller in his *Straw*; and the only satisfactory solving of the matter, to my mind, is that the pollen has all to do with it; for when little pollen is coming in I have generally found the first eggs next the comb having brood already in it. When pollen comes in plentifully the bees pack it in the cells immediately surrounding the brood, and hence it comes about that, when the hard maple is in bloom, in this locality, we have combs next the brood-nest solid, or very nearly so, on the side of the comb next the brood, on either side of the brood-nest, so that the queen can find no vacant cells to lay in; hence she is obliged to go clear around the comb to a point opposite the center of the brood in the comb adjoining, to lay, when the brood is on the increase. Immediately on her doing this, pollen is rushed into the cells of the next comb opposite the eggs she is laying; this, in turn, compels her to go to the opposite side of *this* comb to lay her eggs also, and thus it keeps on till the outside of the hive is reached.

Soon after she has filled the cells furthest from the brood with eggs, hundreds of larvæ are hatching in the comb opposite the cells which are filled with pollen, this causing the bees to remove this pollen for use in the manufacture of larval food, when the queen now fills these cells with eggs, though she often scatters eggs all through this pollen mass, if there are any vacant cells, before the general removal of pollen. From this cause we always find, during proficient brood-rearing in May and the first half of June, the first eggs and the first sealed brood on the outside of the combs, or on the sides furthest from the center of the brood-nest.

ASSORTING SECTIONS.

Naughty Dr. Miller wants to get Doolittle and Hasty to fighting. See fourth *Straw* in February 1st number of GLEANINGS. Well, my sleeves are all rolled up, and I am ready, so I will just pitch in without any further preliminaries. My honey is all stored in sections which are held in wide frames, four sections to each wide frame. As these wide frames are unclamped, the eye soon decides to which grade the honey belongs, and so I quickly set those suitable for fancy in the XXX place; those for No. 1 in the XX place, and the rest in the X place, always having a wide frame of four sections standing at each of these three places as a sample for the eye to "work" from. My shipping-cases hold twenty sections; and so, as soon as I have five wide frames in any one of these three places, I take the sections from the frames, place them on a little tray, set the tray on the scraping-block, and the shipping-case close by; then, as I scrape, I set them in the shipping-case as soon as all propolis is nicely cleaned off. There, doctor, I know you will not want Hasty and Doolittle to fight again, as you will see that Doolittle's plan is only the Morton-Niver plan, with a little variation; and I had never thought the matter of enough consequence to mention it before; and until E. R. R. wrote up Morton I did not know that any one else worked as I was doing, nor that there was any importance attached to the thing, anyway. And this reminds me that, think as much as we will, there are many little kinks about bee-keeping that are of great help to us, that we use for years, without even being thankful enough for them to tell of the matter to others. I much prefer the X's for rules in grading to any thing else, for these can be put in the handholds of the case, out of sight from any one except the one who is in the secret.

FACING COMB HONEY.

I read Aaron Snyder's article and the editor's comments, under the above heading, with great interest, and wish to say a few words in the matter. As the sections are taken out of the wide frames, I am on the lookout for the "face" side of each section; and out of the 20 that are placed on the tray I set eight, each having an extra "pretty face," by themselves on one side of the tray, while the twelve not having quite so pretty faces are set on the other side of the tray. The eight are scraped first, and their "rosy cheeks" turned out, so

that every passer-by may see them when the other twelve are set in the center of the shipping-case out of sight. Now, mind you, all of these 20 sections were XXX honey; but some of them had a little "fairer cheeks" than the rest, and it was these "fair ones" that were to say to the passers-by, "Ho! turn this way if you would have something sweet!" And I consider such "facing" just the thing to do, and shall continue to do it unless "something gets me," as it is something that is customary, demanded by nearly all, and contains nothing of a dishonest nature.

A little boy about five years old, too tired for any thing but sleep, refused one night to say his prayers. His uncle, who was present, said, "O Harry! would you go to sleep without asking God to take care of you during the night?" The little fellow answered, "I didn't say 'em last night; I ain't goin' to say 'em to-night, and I ain't goin' to say 'em to-morrow night; and then, if nothin' don't get me, I ain't goin' to say 'em no more."

And now a word about those apples the editor tells us about. Apples are graded and fixed very much as are my cases of honey, and, as the editor was told, "everybody expects it."

A professional apple-barreler was through this section this fall, and as he was in the orchard adjoining my bee-yard I went to see him. I found him sorting "facers," as he called them, for his No. 1 apples. I asked him about the matter, and he handed me his "rules," which were given him by the firm he was at work for, which handled thousands and millions of barrels of apples. These rules told him that, in a barrel of No. 1 apples, he must not put an apple of the Northern Spy, Baldwin, Greening, etc., varieties that measured less than $2\frac{1}{2}$ inches in diameter; and he had a piece of board with that size of hole bored in it for a measure; and any apple that would slip through that hole was to be rejected. Then no apple was to go in that had any worm-hole or wormy blossom end, or that was knotty, or specked with rot or moth patches, etc. Then from such No. 1 apples he was to sort the largest and most perfect, and place a tier all over the bottom of the barrel, with the stem end down, and on this tier pour from a peck to a half-bushel of the same apples he had put stem down. He was then to fill the barrel with No. 1 apples, and, after heading it up, turn it over and write the grade and the variety on the head having the facers immediately under it. Now, I ask the editor, Mr. Snyder, or any one else, if there was any thing dishonest or wrong in this matter? Was not every one of those No. 1 apples just as good as any housewife would ask for? And were not the $2\frac{1}{2}$ -inch apples just as valuable, looks excepted, as were the three-inch ones? And the same applies to my XXX honey; and I also claim that there is nothing out of the way, if any one chooses to do so, in shipping cases of honey having XXX facers and XX or X honey inside, *on commission*. Yea, more; I claim that there would be nothing *dishonest* in filling the center of the case with buckwheat honey, the same having XXX white-honey facers, providing it was *shipped on com-*

mission, every case alike, and the producer thought it to his interest to do so. I should doubt the wisdom of such a course, but I can not see that such a thing would be dishonest. But if a customer was told that the honey was such as he sees on the face, all through, and it was sold to him with that understanding, then the thing would be decidedly dishonest. Commission men are supposed to show the goods they have to their customers, by opening a case or two, and the buyer knows what he is purchasing; and, also, the commission man is supposed to sell whatever is shipped him according to his best judgment, to the best advantage of the consignor. It is always well to stop to analyze our thoughts and words before we go off in a tirade of abuse, lest, when they are fully analyzed, we find ourselves open to censure and reproach.

Borodino, N. Y.

[I am sorry to do it, but I am afraid I shall have to confess again that I have never noticed the tendency of the queen at certain times to seek a fresh comb further from the brood-nest; but you may be sure I will be on the watch next season.]

Yes, it is indeed true that we each and all are sometimes using some little valuable kink that we ignorantly suppose every one knows of; but in the case of the Morton-Niver method of grading, it would appear as if it were new to many.

With regard to using the "letter X" method of grading, it may be that there is another good idea—perhaps an improvement over the methods that are usually used for designating sections. X is very easily made, and three X's can be made with six strokes of a pencil or pen. The equivalent term, *fancy* (to designate the same grade), takes, as I write it, fifteen strokes. Then the use of a single letter X to designate the third grade of honey does not sound so bad as the ordinary term employed—No. 2 honey. Now, understand I am not advocating that we should make the change—only that the X system has certain advantages worth considering.

With regard to facing crates of honey or barrels of apples, I think it all depends on whether *intentional* deception is used. In the case that Mr. Doolittle mentions, it would appear that the apple-packer had no thought of trying to deceive. At present I do not see any objections to putting up honey in the manner Mr. D. describes. Whenever we buy honey we always judge of a crate by random sections picked out here and there in the *crate*, and never by the facing. The front of the case, as Mr. D. says, will be apt to have the best honey out for display, and not for the purpose of deception.—ED.]

A. A. M., Pa.—The keeping of bees in garrets has been practiced by bee-keepers for a good many years. As you state, it seems to obviate entirely the trouble of swarming. For full particulars in regard to the method, we would refer you to the department of "Swarming," in our A B C of Bee Culture, under the particular heading of "Bees in a Garret."

MANUM'S EXPERIENCE, NO. 3.

Foul Brood Not Cured by Salicylic Acid; the Starvation Plan a Success.

BY A. E. MANUM.

The season of 1874 was a poor one for honey; but I managed to double my colonies, and by feeding I succeeded in wintering my 60 colonies with the loss of but one. The year 1875 was a good one, and I got something over two tons of comb honey, and I will say that that season was one of the most enjoyable I ever experienced in the apiary, before or since. I left my harness business in charge of one of my men for six weeks, hardly going to the shop during that time. I was too much occupied in the apiary, rearing queens for the purpose of Italianizing my own colonies and those of my neighbors—constructing and experimenting with new hives and other new things. Very many of my new and *great* inventions, however, were consigned to the “dump.”

Were I to tell you, Mr. Editor, of all my experiences, both pleasant and sad, I think the story would fill the pages of GLEANINGS for a year. I will, nevertheless, relate one very unfortunate experience that came to my lot at this time.

Just when my enthusiasm was running high, when I seemed to see success floating a fortune within my grasp, here I was with a nice apiary of 120 colonies, nearly all in my improved hive (now known as the Bristol hive); and, as I supposed, all were in prime condition; but, to my surprise and sorrow, I discovered in some of my colonies that terrible and much-dreaded disease “foul brood.” It was the latter part of July, 1875, that I suspected my bees were affected with it. I at once visited my friend and adviser, Mr. J. E. Crane, who, after listening to my description of the appearance of my brood-combs, decided that foul brood was in my apiary. Mr. Crane gave me directions how to proceed in order to prevent its spread to healthy colonies, and advised me to destroy all affected ones. This was almost heart-rending; and to think of destroying 25 or 30 colonies was *too much*. I wanted to save the strong colonies. I had an apiary that I was proud of; and to destroy a portion of it seemed more than I could endure. Nevertheless, the next day I hired a man to dig a grave, 12 feet long by 2 wide by 5 deep, in which I buried all the foul-brood combs I could find. Twenty colonies were deprived of their combs, and the combs buried as stated above. The bees were given *new* hives, and allowed to nearly starve (this being just after the close of basswood, and before buckwheat bloom). At the end of three days I fed each colony 1 lb. of sugar syrup. I continued this feeding for about one week, when buckwheat came to my assistance with a bountiful supply of honey; and the way these twenty colonies worked was truly wonderful. This was before the days of comb foundation, hence they were hived with empty frames. In twelve days from the time buckwheat bloomed, Mr. Crane called on me; and on opening some of these hives we found to our surprise that these colo-

nies had not only filled their 12 frames with nice straight combs, but had stored honey enough to winter on. There remained in my apiary but a few colonies that were affected, and those very slightly. But, dear me! before the summer of 1876 was half spent I found myself with over *fifty* diseased colonies. I suppose I spread the disease by changing combs from one hive to another the season before.

During the winter of 1875 I had read of a remedy for foul brood by the use of salicylic acid. I procured 5 oz. of it, at \$4.00 per oz.; an atomizer, \$3.50; spirits to cut the acid, \$3.00, making \$26.50 in all. This was used faithfully, according to directions, and with but little effect. I did think that the disease was kept somewhat in check by the use of the acid; but it did not cure in my case. I resorted, therefore, to the old remedy, as practiced the year before, except that this time, instead of burying the combs, I rendered them into wax which I sold for 25 cts. per lb.

The next season, having bought a foundation-mill, I bought the same wax back, for which I paid 32 cts. per lb.

During the season of 1877 I succeeded in ridding my apiary of this dreadful disease, and to this day I have never had any symptoms of foul brood in any of my apiaries.

To be continued.

[Your experience with salicylic acid is exactly ours. It never had any effect whatever in curing the disease, that I could see, and I used it liberally and according to directions; but the starvation-foundation plan worked every time. Knowing now as I do that there is a kind of dead-brood disease that greatly resembles foul brood, and which will usually go off of its own accord, doing but little or no damage, I am inclined to think that the parties who recommended salicylic acid, and claimed it as a specific for foul brood, never had the real foul brood itself, but had this pickle-brood or dead-brood disease that I have been speaking about. As this malady would disappear anyhow, when they gave the salicylic acid and the dead brood disappeared, they naturally jumped to the conclusion that salicylic acid was *the* stuff to cure.—Ed.]

MANUFACTURING SUPPLIES.

It does Not Pay the Average Bee-keeper to Do it, and Why; Importance of Lumber of Exact and Uniform Thickness.

BY G. C. GREINER.

The question, “Does it pay the average bee-keeper to manufacture his own supplies?” comes up occasionally for consideration. As a rule I would emphatically say it does not. In some cases it may seem as though there might be some gain or advantage in dabbling in the supply business; but when you sum it all up, very little is gained by the operation. If the bee-keeper is at the same time a farmer, has a team to keep through the winter, with no steady work for them to do; has on his prem-

ises, or near by, pine, basswood, poplar, or other suitable timber for his supplies which he wishes to cut; has sawing and planing facilities at his command, and is somewhat of a mechanical turn of mind, then it may possibly pay to manufacture some of the easier-made articles himself, especially if he has leisure time that otherwise would be wasted. But if he has to buy his lumber, pay for the raw material nearly or quite as much as the supply manufacturer asks for the manufactured article, has to draw it for miles to a saw or planing mill, and then manufacture a greatly inferior article in the end, in my opinion it does not pay him.

As an illustration I will give you a little experience of former years. In the earlier days of our bee-keeping we had to do, outside of our own work, quite a little custom work for our neighbors. We had no planer of our own, but depended on our neighboring planing-mills for that part of the work. In the manufacture of hives it is of great importance, as all bee-keepers probably know, that most of the lumber be dressed to exactly the required thickness. A variation of $\frac{3}{32}$ or even $\frac{1}{16}$ inch will not answer. It must be within a hair's breadth. Being anxious to have our planing done in this manner, we would inquire of the foreman of the mill something like this:

"Can you dress this load of lumber exactly $\frac{3}{4}$ inch thick?"

"Of course we can, or any thickness you wish," would be the reply.

After running the first board, we would find on examination that it was either too thick or too thin—sometimes $\frac{1}{16}$ out of the way. Then the foreman would change his planer once or more times until he thought the right thickness was obtained. But another examination would reveal the fact that the planer did not dress the two edges alike, or the middle of the board would be thicker than the edges. This, of course, was a serious affair. It could be remedied only by putting the planer in perfect working order; and this, as every one acquainted with machinery knows, is, under the circumstances, a long and particular job. We met the same trouble at all the surrounding mills—never had planing done to our satisfaction; but in working up the material we had to make allowance for their imperfect work.

Now for the comparison. Last spring, after the bee season had fairly opened, I found myself short of some supplies. I needed, among other articles, a lot of supers, which in former years I had manufactured myself; but as conditions were not favorable for making them at that time I ordered them, with the rest of my supplies, of The A. I. Root Co. I hardly need say that every thing arrived in first-class order at the proper time. What interested me the most was their way of dressing lumber. As soon as the packages were opened I took one super side-piece out of the lot, and, with pocket-rule in hand, proceeded to give it a thorough inspection. The result was, measure where I would, on the sides or ends, it measured so nearly $\frac{3}{4}$ inch, the thickness ordered, that the naked eye could not detect any variation. Not satisfied with that, I then took four

pieces of the same kind, laid them on top of one another, and measured again. The result was the same. When squeezed together the four would measure exactly 3 inches. In other directions the same precision was plainly to be noticed—perfect workmanship in every respect. The question, why this difference? is easily answered. All the supply-manufacturer's machinery is calculated for this work; every thing works to perfection. He gets the right kind of material in large lots, cheaper and better than the individual bee-keeper could possibly secure; he has a chance to select from these large quantities whatever he needs for the various purposes to the best advantage; he has practically no waste of material; every thing, even to a little strip $\frac{1}{8}$ inch square, is worked up into some salable article. Other advantages could be mentioned, but it is not necessary. If we look the matter squarely in the face, I think it pays about as well to depend on the regular manufacturer for our supplies as to undertake to supply ourselves.

Naples, N. Y.

[No one can appreciate the absolute importance of having lumber of uniform thickness so much as manufacturers of bee-supplies. They have to have special planers and special planer-knife grinders. The great trouble with the average planing-mills is that they allow the knives to become a little hollowing in the center. It makes no difference in their business, because, if their boards are a little thicker in the middle, the house-builder makes no complaint. It is a rule, I think, that the average planing-mill man can not plane boards of an absolute thickness, for the simple reason he has no facilities for doing it; and while we do not claim for ourselves perfection in this particular (as we know the knives do sometimes get a little out on us once in a while), our wood-workers know that, if they allow stuff to go out of our shop, of uneven thickness, they will hear from us in no uncertain sound.—ED.]

CAGING QUEENS A LA DOOLITTLE.

The Plan Not Successful, and Why; Preventing Increase; Queenless Colonies; do they Lack Vim?

BY THOS. W. ODLE.

I was much interested in what Bro. Doolittle says about caging queens, page 16. I have experimented on this line to some extent, and it was any thing but satisfactory. I caged the queens of 30 colonies in cages like Doolittle's, with the stoppers left out, and deposited the cages between the end-bars and comb, on top of bottom-bars, or between two combs of brood. The result was, the bees swarmed out in three or four days after the queen was caged. I would lift the combs and remove the queen-cells, and in a day or two they would come out again, and they continued to do so as long as they had brood from which they could start cells. The result was that they got into such a fever to swarm that work

in the sections almost ceased; and that was not all. The queens were released in from 13 to 15 days; a large number of them were superseded in a short time; others I replaced in the fall. Three of those not replaced disappeared during the winter. At that time, 1889, I had 80 colonies; at present, 83. My loss in wintering during these eight years has been $\frac{1}{2}$ of one per cent.

My way of preventing increase is to remove the queens when they swarm out. I usually put my foot on the queen unless she is an extra good one; then I set her away on a comb of brood for future use. At the proper time I remove all cells but one, and in about twenty days I have a young laying queen that is worth two old ones.

You say in your footnote, "Queenless colonies lack the vim and energy of queened stocks." They do not in my apiary. They will average more honey for me to the colony, handled as above, than those having their queens in the hive during the entire honey-flow. The past season I hived the swarms from what I supposed to be six of my best colonies on empty frames, and gave them the sections from the old hive. The result was, I had six colonies with queens removed that averaged twice as many finished sections as the hived swarms did, and the hived swarms failed to reach the average of the seventy colonies with queens removed. The advantage of having all young queens, I consider of very much importance.

I notice that Dr. Miller says, in one of his Straws, that his sections averaged $\frac{1}{2}$ oz. heavier in 1896 than in 1897. That is nothing. Mine were $15\frac{1}{2}$ oz. heavier in 1897 than in '96, and there were 4600 more of them, all sold, and they did not go to the city either.

Randolph, Ind.

[Although I know that such good men as Elwood, Doolittle, and scores of others, make the caged queen plan a success, it has not worked very satisfactorily in our hands. In the first place, it entailed a great deal of work in hunting out the queens, caging them, and subsequently destroying the cells; and then I never could get such colonies to work like those that had queens. They would sulk, and do little or nothing in the supers, while the other stocks were doing a land-office business.—Ed.]

A CALIFORNIA BEE-KEEPER'S THANKSGIVING.

BY RAMBLER.

After passing several months on a lone bee-ranch in one of those wild canyons for which California is noted, I began to long for the social features of the home. As Thanksgiving approached I hoped that some kind friend would remember my bachelor condition and give me a social privilege on that time-honored feast day. While entertaining these thoughts it is unnecessary to say that I was delighted to receive an invitation to partake of a Thanksgiving chicken with my bee-keeping friend Geo. K., who lives in the suburbs of that beautiful summerland city, Riverside, Cal.

Mrs. K., dear woman, is an invalid, and many weary days is she confined to her bed. When able to leave the bed Mrs. K. has full charge of the culinary affairs, and, not being able to get away from the immediate vicinity of the house, she takes especial pride in caring for the poultry.

A few spare moments each day are spent in feeding and petting her beautiful Plymouth Rocks. The whole forty-seven had appropriate names, and when their rations were placed before them they expected to eat a portion from the hand of their mistress. But now on this Thanksgiving day Mrs. K. is confined to the bed in the front parlor bedroom; and Mr. K., kind and considerate man, desiring to consult his wife about which chicken should serve for the Thanksgiving honors, proceeded to the henery, caught a fine fowl and tramped with it across the veranda, through the kitchen, through the dining-room, and into the bed-room. With the merest side glance Mrs. K. recognized her pet chicken bearing the name of Mollie. It had a special endearment from being rescued from a pail of slops after life had become nearly extinct.

"No, dear George," said Mrs. K., with a sigh; "I can not have Mollie killed—poor dear Mollie!"

Mr. K. marched right out and caught another fowl, and again it was across the veranda, through the kitchen, dining-room, parlor, to the bed-room.

"Well, how is this for the oven, Mrs. K.?"

"Why, George, that is my best sitting hen. I really believe she would sit for ever if I allowed her to. I have named her Patience, and Patience must not be killed."

Mr. K. not only had Patience in his hands but patience in his heart, and he promptly marched out again bearing a contented smile.

Before he caught another fowl Mr. K. happily thought it would be a good plan to place the hens that had been caught, and put through the salvation process, into a separate pen, muttering to himself meanwhile that he didn't see any difference in the tarnal hens.

Mr. K. then caught the most contemptible-looking hen in the flock. Again he marched across the veranda, etc., and again appeared before the bed; but his coming was heralded this time, for this was a musical hen. Her protesting squalls resounded to every portion of the house; and before he had reached the bedside Mrs. K. shouted, "George! George! that is my dear Gabrielle. She is not pretty, I know, but she keeps the hawks away; she is an immense squaller, and no hawk dares to drop down here for a chicken."

"Well, I should say she did squall," said Mr. K.; "she is rightly named Gabrielle, for she can beat Gabriel's trump out of sight."

S-q-u-a-l-l, s-q-u-a-l-l through the dining-room, veranda; and as Mr. K. was traversing the space between the house and the chicken-inclosure, neighbor W. shouted to him from the road.

"Hello, K.! Can I borrow your wheelbarrow to-morrow?"

Mr. K. put his hand to his ear and shouted, "What d'y say?"

"C-a-n I b-o-r-r-o-w y-o-u-r w-h-e-e-l-b-a-r-r-o-w?"

Mr. K. didn't hear; he lowered his hand, and, with a piston-valve action on Gabrielle's neck, the squalls immediately stopped.

"Now, neighbor W., say that over again."

"Can I borrow your wheelbarrow to-morrow?"

"Yes, if that is all; you see I am very busy; good day."

Mr. K. had a real contented smile while he caught another fowl and took up his line of march to the bedroom; but before he even entered the parlor Mrs. K. shouted, "George, why, oh! why did you choke poor dear Gabrielle?"

George disappeared again with a contented smile, and grateful for the blessings of good health; but he remarked, as he strode along, that he didn't see but a crick in the back was as mild as a cramp in the leg.

Several more pets were brought in, in rapid succession, the last time a fowl in each hand. They were all choice pets, and must not be sacrificed.

Then there was another parley. "Poor George!" said Mrs. K., "I am so sorry for you; why didn't I think of that before?" she suddenly exclaimed, as a new idea came to mind. "There's a hen, George, that I never took much of a fancy to; she has long wattles; and when she runs they go flip-flop, flip-flop."



"NO, GEORGE, YOU MUSTN'T KILL POOR MOLLIE."

But Mr. K. was holding another fowl for Mrs. K.'s inspection. After a moment's contemplation which gave Mr. K. some hopes that he had at last found the acceptable fowl, Mrs. K. smiled and exclaimed, "Why, George, that is Dom Pedro; take him right back; we can not spare him."

Mr. K. about this time felt like holding a parley, and, said he, in a conciliatory tone, "Now, Mrs. K., couldn't you get into this little rocking-chair and let me carry you to the kitchen door, thereby avoiding all of this travel?"

"No, no, George," said Mrs. K., earnestly; "it would strain your arms and back. You know, George, you are subject to cricks; you must be very careful of your health; for if you are sick I don't know what I should do. I am sure you will get the right one next time."

George went out with a more contented smile this time, and a lighter step. This would surely be the last time. To his eyes, all of the hens had long wattles; and when he had trotted them around the yard a few times he found that all of their wattles flip-flopped; but he selected one, and started on his usual journey when one of the hens that he had just chased hopped up on a box, and crowed.

"Well, there! by Jupiter," said Mr. K., with vehemence. He instantly dropped the hen in hand, and, after a little chase, caught the impudent crower, and with quickened pace entered the house; and before he entered the bedroom he shouted, "I have caught her this time, Mrs. K."

"No, no, George! that is not the one I meant; that's Susan B., the strong min—"

"Susan B!" and Mr. K. said it with the

utmost sarcasm; "Susan B! can't help it, Mrs. K.; her head must come off; she crowed, Mrs. K.; I say, she crowed."

"No, George."

"Yes, she did; she crowed; and I say when a female hen usurps the masculine prerogatives of a rooster she must die."

"Dear George, don't get so angry; do spare Susan B.," said Mrs. K., with tears.

"Now, Mrs. K., didn't you say only yesterday, when you saw that woman pass the house in bloomers, and astride a horse, she looked ridiculous, and you wickedly wished that some one would pitch her off the bridge? Now, the woman had some sense."

"Sense! why, George, she hadn't so much sense as that hen! the very idea of sense, and astride a horse! but, George, do spare Susan B."

"But she crowed, Mrs. K.; and my weary legs, and the duty of upholding the prerogatives of the male sex, lead me to say firmly that Susan B. must die," and he left the room in haste; and, though Mrs. K. covered her head with the counterpane, she heard the dull thud of the ax on the chopping-block, and Mrs. K. knew that Susan B.'s head was rolling in the dust.

The fowl was duly scalded; and, while the feathers were being plucked, Mr. K. enjoyed a calm smile; and now and then muttered words would escape from his lips that sounded like "usurped prerogatives."

Mrs. K. soon became reconciled to the fate of Susan B., and gave directions for the stuffing and roasting. At the appointed time two happy bee-keepers sat down to a dainty repast. Mrs. K. became so much interested that she insisted upon being helped to the lounge in the dining-room, and, though not partaking of the good things on the table, she partook of the flow of conversation; and so passed happily our Thanksgiving day.

ANOTHER GOOD-NATURED GROWL AT THE A. I. ROOT CO.

A Triangular Discussion Regarding the New Things—Fences, Plain Sections, Reversible Bottom-boards, etc.

BY W. B. RANSON.

Dr. C. C. Miller:—I have for years profited by keeping quiet and practicing what other bee-keepers write in the bee-journals, or such of that as seems to be of value to the cause; but now as changes in our fixtures are becoming so great that it is no longer wise to keep silent when the interests of all bee-keepers call us to speak out, I take the liberty to write you this letter.

Well, what about all this changing in supers and sections? Are they any better than what we have had for years? Is the section-holder better than the T super? With us the latter is infinitely better, and will, I think, remain superior to any thing that requires extra pieces of wood between sections and top-bars of brood-frames. Are the tall sections better? If so, why not have them $4\frac{1}{4} \times 5$, when we could

all use them in our standard $4\frac{1}{4}$ fixtures by simply placing a ring above to get height of super or cases? But 4×5 or $3\frac{5}{8} \times 5$, or any thing except $4\frac{1}{4}$, breaks up our whole arrangement. What about all this new slat bottom supers and separators changing? are they any better? Well, for separators I think nothing equals the T super with no slats between sections and top-bars; and with no separators, nothing equals the old-style Heddon case. I run for fancy comb honey, and have on hand now a lot of the whitest, straightest, most uniformly filled sections it was ever my pleasure to see, and I took it off the hives last season in old-style Heddon cases with no separators, and the honey is filled out within $\frac{1}{8}$ inch of the edges of the sections, and sells readily here to grocers at 13 cts., and to consumers at $16\frac{1}{2}$ cts. per 1-lb. section.

Right here let me say that my bottom-board has much to do with combs being built straight in frames and sections (don't laugh, please), as with it the hives stand absolutely level crosswise and lengthwise, and at the same time the bottom is $\frac{3}{4}$ inch lower at front end. I use a plain flat bottom, with strips nailed one on each side, one inch square at front end, and $1 \times \frac{1}{4}$ in. at back end; stand hive on this, and I have one inch entrance (which I've used for years), the width of hive; and at the rear the frames come within $\frac{1}{4}$ in. of bottom, inviting the bees to the rear when the frames are in easy reach. Now, with all frames and sections absolutely vertical and plumb, both crosswise and lengthwise, and with proper starters, the sections with me are filled nice and straight every time, without the separators. With the bottom as above, with this very large entrance I use a strip and button, one edge of strip cut out large, the other small entrances. I can reverse 20 of those strips, I think, in the same time it would take Messrs. Root and Danzenbaker to lift off the colony and reverse one bottom-board, and when I would have accomplished the same end; and, besides, I don't have the flanges running past the front end of the hive on each side of the alighting-board so as to prevent me from sliding queen-traps, guards, or strips across the entrances. I tried some that way, but soon leveled the naughty flanges down smooth with the end of the hive. You see those wedge-shaped strips the hive rests on give the fall for water to run off the bottom, give the large entrance, give the bees a chance to climb on the rear end of brood-frames, and the hive also level.

Now, the conclusion I reach from practice is this: The fewer the number of pieces to buy, handle, and clean, the better it is for the bee-keeper; so with the T super and Heddon case; with no separators, and on hives leveled up as aforesaid, and proper starters in sections, I get straight pretty combs and well-filled sections; have no difficulty with crooked combs, and have left out all separators, fences, slat-bottoms, section-holders, etc. Whew! what a pile of stuff left out! and the most important of all is, the bees have a supreme hatred for them, and enter sections more readily without them.

Doctor, you ask about getting bees to clean up unfinished sections. Try placing supers under brood-chambers. I have no trouble that way. It works nicely in early spring to start up brood. I keep over winter quite a lot for that purpose. I have other points, but this is now much longer than I intended.

In closing, let me say that I trust this will not be construed in any sense as being adverse to The A. I. Root Co., for I never had dealings with better people than the Roots, nor have I seen better work than they send out from their factory—it's superb. Their paper also is the cleanest and brightest I read. I wonder if their kind endeavors to give all bee-keepers what they want has caused this fence and section racket—quite likely. If we should pass an occasional letter I will give in detail other points, especially comb honey and swarming.

New River Depot, Va., Jan. 20.

[To the above, Dr. Miller replies:]

Friend Ranson, the matters discussed in your letter are of such general interest that it may be worth while to take the editor of GLEANINGS into our confidence and have a triangular conference—especially as he is largely responsible for the changes that you deprecate. I confess that the matter of making such radical changes is a serious one, to be justified only by something so manifestly better that we can not afford to omit the change. For myself I shall move somewhat cautiously until satisfied that I should gain enough by the change to recoup me for my loss in throwing away my present stock of supers to the value of \$250.

But don't you think that you are a little unreasonable yourself? Evidently you are inclined to the belief that we should hold on to our old fixtures, and yet in the same breath you speak of changes that you have yourself made, and quite plainly you think that others should make the same changes you have done. So that you are not so much averse to change, providing the change is one that suits *you*. Let me tell you wherein I think you are bad. You've been going on all these years using what you thought was a good thing, keeping it all to yourself, until some one tries to reach the same thing in another way; and then, after some have been to the trouble and expense of making the change, you are ready to say what you ought to have said long ago. But perhaps we'd better not quarrel about that now.

You ask whether the section-holder was any better than the T super. That depends upon who answers the question. The editor and I are not on speaking terms on that question. He thinks the section-holders better, and wonders why I can't see it. With my knowledge and management of T supers and section-holders, I am very, very sure that the T supers are far and away ahead. And yet it is possible that, if I knew as much as he about the section-holders and their management, I might prefer them. And it is just as possible that, if he knew as well as I how to manage T supers, he might experience a change of mind. I suspect that he thinks I stand almost alone

in preferring T supers. Others, like yourself, go on using them without saying anything, so he doesn't know about them. In some respects you are wise in keeping quiet.

I don't know enough to answer your question as to whether the tall sections are better. I can hardly say that they look any better to me. But here come witnesses who say they have been using them, and they like them, and, what is more emphatically to the point, they say they can sell them better, and some, at least, say they sell them for a higher price. If only one man said so, or if the followers of one man said so, it might not deserve very much notice; but the use of tall sections seems to have originated independently in more than one place, and all give the same sort of testimony. If any one has tried the tall sections, and has not found them good, he has at least kept very quiet about it. If they are undeniably an improvement, and are to come into use, it seems a fair question to ask, "Why not give a chance for them in T supers?" Possibly the editor thinks the number of T-super men so small it isn't worth while. (Between you and me I suspect that there are three or four times as many super adherents as he supposes.) But before we come down on him too hard, we'd better first find out whether he will refuse to grant what we ask. For we must remember that the chief business of supply-manufacturers is to supply demand. Can we agree upon what we want? If we have a section $5 \times 4\frac{1}{4} \times 1\frac{3}{8}$ it would be too heavy. How would $5 \times 4\frac{1}{4} \times 1\frac{1}{2}$ do? That would give us a section very nearly the same weight as a section $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{8}$.

Your bottom-board has something in it decidedly good; and the fact that the same idea has been quietly used in more than one quarter with great satisfaction for years says much in its favor. It does seem boiled-down nonsense to give the whole hive a forward pitch just for the sake of having the same pitch for the bottom-board or floor, when the floor can have its own pitch independently, and leave the hive level, not only from side to side, but from front to rear. Then, too, it gives us the advantage that may be of real value that the bees are forced to make their way up the sides and rear on their way to the supers. By all means let us have the hive level. It certainly seems that we can have truer combs than with a slanting hive.

If a perfectly level hive will do away with the necessity for fences and separators of all kinds, then that's a fourfold reason for level hives. But that seems almost too much to believe. Do you mean to say that, without separators, every one of your sections is built true with no hollowing or bulging? If you lay a rule across the sections, are there no cases in which the rule would touch the comb? Or do you merely mean that they will do for a home market, with a chance to get rid of bulgers without any careful packing? What makes me just a little more careful in inquiring about this is that, years ago, it was claimed that, with Heddon supers, no separators were needed. But others who tried the same thing found that separators were needed, and gradu-

ally it has settled down almost into an axiom, that, for good shipping, it is impossible to get along without separators; and the supposition is that those who thought separators were not needed were more easily satisfied than they ought to have been with their sections.

The practice of slanting hives forward is so almost universal that probably not a great many could give testimony as to whether separators are needed with level hives. If any have had experience in that direction it is to be hoped that they will give it, no matter on which side. Certainly if we can get along without separators it will be a great gain.

I have tried your plan of putting sections under brood-chamber in spring to have them emptied—put hundreds of them under—but it didn't work well with me. The bees didn't empty them up promptly, as I expected, but very slowly; and by the time they were emptied they were darkened and utterly unfit to use. Your management may have been different.

C. C. MILLER.

Marengo, Ill.

[I admire the frankness of friend Ranson, and I am glad he has spoken just exactly as he feels. To start with, I can simmer the whole matter down in a nutshell, by saying what we all three know to be true, that it is not possible to please every one. Friend R. and Dr. Miller think there is nothing better than the T super; and I am well aware that there are many other good bee-keepers who think the same thing. If I am correct, the most extensive bee-keeper in the world, Capt. Hetherington, uses the T super; and there are other prominent bee-keepers, such as A. E. Manum and Hon. Geo. E. Hilton, who could not be persuaded to use any thing else. On the other hand, there are others who think the T super is simply intolerable, in evidence of which I would refer to S. A. Niver's article in our issue for Feb. 1, page 81.]

Our position as supply-dealers and manufacturers is to furnish what bee-keepers call for, and at the same time suggest and introduce improvements that, in our judgment, will be a benefit to the industry as a whole.

Do not misunderstand us, friend R. When we introduced the fence we did not expect nor do we now advise bee-keepers to discard their old supers; but if the plain section has merits, it is perfectly evident (if one will follow carefully the printed matter that has been put out in regard to them) that it can be used in the old-style supers; and there are special fences made to fit these old T supers, old section-holders in old supers. Assuming that sections have to be bought every year, the bee-keeper loses nothing by substituting plain sections in place of the old-style bee-ways; and the only added expense is for fences to take the place of old separators which, if made of a thin slice of wood, are probably ready for the kindling-pile if they are ready for any thing.

A part of the expense of the fence can be offset by the saving effected in shipping-cases.

With regard to the tall section, Dr. Miller has covered that point. In addition, I might say we did not introduce the 4x5 for the fun of it, but because we knew we were losing a large

trade from some bee-keepers who were actually making their own goods, so as to get what they wanted.

Yes, friend R., a 5x4 $\frac{1}{4}$ section can be used in old-style supers and section-holders by putting on a rim to make up the extra depth; but it is apparent these 5x4 $\frac{1}{4}$ will hold more than a pound, unless made so thin as to render old section-holders useless, and there, you see, you would be running into the very snag you would have us avoid. We adopted tall sections (3 $\frac{3}{8}$ x5) that could be used in the ordinary eight-frame super by simply adding on a rim and plain slats to support them. The width of 3 $\frac{3}{8}$ x5 was fixed upon because 5 such sections would just fill out the space in the length of an eight-frame super, such as thousands of bee-keepers are now using; and as there is a great demand for sections holding from 12 to 14 ounces of honey, this style of section will fill the bill for a tall section. It is very near the size used by Mr. Morton and Mr. Doolittle. The 4x5 is the same thing as the section used by Capt. Hetherington (3 $\frac{3}{8}$ x5), with the exception that we employ even inches; and these even inches make the section hold an even pound. There are some who want a section that will average as nearly a pound as possible, and this 4x5 fills the bill.

I doubt very much whether the average bee-keeper could dispense with separators, even if he did level up his hives. I say "average," because I know the general run of them secure honey that is bulged and uncratable. Several times we have come near deciding that we would absolutely refuse to buy honey unless it had been produced with separators. Now, I am not saying that friend Ranson or anybody else can not produce cratable honey, but a device or system that will work for one might be very unsatisfactory for the masses. For this reason, as Dr. Miller has well said, the Heddon non-separator case did not prove to be popular, and I know it was used by some who were expert bee-keepers.

With regard to giving better ventilation by the construction of the bottom-board at the entrance, there might be a difference of opinion as to which would be quicker—the manipulation of a reversible bottom-board or a series of movable slats. We selected the Danzenbaker reversible, not that we ourselves would necessarily use it one way at one time of the year and one way at another time, but because we wanted one that could be adapted to the diverse notions of two classes of bee-keepers—one class who insist that the bottom-bars of the frames must come within $\frac{3}{8}$ inch of the floor of the hive; and the other class who want plenty of ventilation and a large entrance.

I am glad this whole question has come up, because, when GLEANINGS gets to a point where it will not print or will not listen to the "other side," then it will cease to be serving its real purpose. There is at least one point upon which we perhaps all agree, and that is on the value of deep and large entrances. Perhaps friend R. will tell us why the deep entrance is better than the shallow one.—Ed.]



A WORD FROM ONE OF THOSE DESPISED
FARMER BEE-KEEPERS.

Mr. Editor, and professional bee-men, please don't throw a club at me, but allow me to intrude my visage into your mystic circle long enough to ask a question or two. The reason I am ready to dodge a club is because of the fact that I am one of those farmer bee-keepers I see so much written about that is not to their credit, so I do not like to speak in your presence. The same thing kept me from knocking at the door of the U. S. Bee-keepers' Union for admittance last fall when I was at the Buffalo convention. I had read so much in opposition to the "farmer bee-keeper" that I was afraid to declare myself for fear of being "blackballed."

The reason I wish to enter now among the writers of GLEANINGS is because I want to ask a question or two. I use the Dovetailed hive, with section-holders and scalloped separators. I was bothered last year by the section-holders sagging so much that they rested in the middle on top of the frames. I think I will lay a quarter-inch strip, this year, crosswise of the middle of the frames, unless you will kindly tell me a better way.

Another thing that bothered me was this: Right where the scallops were in the separators, the honey would be bulged out under the scalloped place, and be joined to the next section of honey, many times, and nearly all were bulged far enough to make them very bad to set in the "no-drip" shipping-cases. From the pictures I see in GLEANINGS, of sections of honey, I do not think others are bothered this way. How do you prevent it?

EDWIN BENNETT.

Malloy, Ia., Feb. 8, 1898.

[It is not I who would throw a club at the farmer bee-keeper; it certainly is not E. T. Abbott, of the *Busy Bee*; but it is the "other fellow;" but if you are not one of the naughty ones who put out poor comb honey and demoralize prices, here is my hand.

Now in regard to your questions: Two or three years ago, when we made our section-holder bottoms thinner than now, we had some reports where they sagged when loaded with honey; but I do not remember of noticing any since we made them thicker. Possibly you had the thinner bars. That other condition, where you speak of the honey being bulged under the scallops of the separator, seems to me is very unusual. I can not understand why it should happen unless you permit the bees to become crowded for room. The professional bee-keeper knows that it is bad policy to let the bees become cramped for storage room, and he accordingly gives the bees another super before the one below is entirely filled. If, however, it is toward the close of the honey season, he lets the super stand just as it is, without extra room above or below.—ED.

THE TALL AND SQUARE SECTION; POUND AND LIGHT WEIGHT; AN INTERESTING COMPARISON.

I am a bee-keeper in a small way, and sell my honey at retail in our city market. A grocer, whose store is close to my stand, this last fall received honey from somebody in tall sections, plain, which held from ten to twelve ounces, and I think they were either $1\frac{1}{4}$ or $1\frac{3}{8}$ thick. He retailed them at 10 and 12 cents each, thus realizing 16 cents a pound. My honey ran 15 to 16 ounces, and I sold at 16 cents a pound also, which made 15 and 16 cents a section. The result was that his honey went off rapidly and mine dragged. If I called attention to the difference in weight it made no difference—they bought the other man's honey anyhow.

Now, I want to buy ten more hives this season, and want to use the plain section and fence separator, and I should like to use a tall section that will hold, when nicely full, 10 or 12 ounces. Will your tall section, $3\frac{3}{8} \times 5 \times 1\frac{1}{4}$ or $1\frac{3}{8}$, give this result, and will they fill the super for the eight-frame hive all right? and will the bees make that thickness of comb as well as in the $1\frac{1}{2}$ -inch thick?

Williamsport, Pa. THOS. V. B. NEECE.

[As I read this over I "smiled a smile," for my thoughts turned toward Dr. Miller, who is ready to fight whenever I broach this subject. Say, doctor, hit Mr. N. this time. His would-be customers evidently bought the tall section because it looked pretty, and because it cost only 10 cents.

I found this condition to exist in many localities that I visited; and it is true in other places that you may tell the consumer as often as you like that the ten-cent section of honey does not hold a full pound, he will buy it just the same. It is the price and not the avoirdupoise that has to do with the matter. On the other hand, I am perfectly willing to acknowledge that in some localities they will not buy a box of honey unless it holds approximately a pound. For instance, a customer will come in and say:

"How much are those boxes of honey?"

"From ten to twelve cents," is the reply.

"Do they hold a pound?"

"No, only about twelve ounces."

If there is a pound box to be had he will buy it in preference to the light weight.

Now, it seems to me the whole point is not a question of honesty, but simply one of selling that which sells best. If consumers demand pound weights, give it them. If they pay ten and twelve cents more readily, give them light-weight boxes. In short, let the market decide the weight and shape of the section.—ED.]

P. L. D., West Indies.—We know of no way that you can protect wood from the ants in your climate unless the parts that come in contact with the ground are smeared with coal tar, coal oil, or carbolic acid. The first named is, however, much the best. We have recommended this often, and, so far as we know, it accomplishes the result desired.



IN the January *Review* Mr. Hutchinson said he could not understand why more perfect combs should be built in plain sections, and that he was satisfied that some factor had something to do with it. He is now (according to the February *Review*) of the opinion that "well-filled sections come from freer communication that is brought in when the plain sections are used." This I believe is the secret of it.

THE NATIONAL BEE-KEEPERS' UNION; OFFICERS FOR 1898.

THE result of the election, as reported by the committee appointed by the Advisory Board to count the ballots cast for the various candidates, shows that all the old officers were reelected. The list stands as follows; General Manager, Thos. G. Newman; President, R. L. Taylor; Vice-presidents, G. M. Doolittle, Dr. C. C. Miller, Prof. A. J. Cook, Eugene Secor, and A. I. Root.

OMAHA FOR THE NEXT MEETING OF THE U. S. B. K. U.

THE editor of the *Busy Bee*, who visited Omaha recently in the interest of the Missouri bee-keepers' exhibit at the Trans-Mississippi Exposition, says, "This exposition bids fair to rival the World's Fair in many respects. It is bound to bring together people from every point of the continent, and it seems to me it would be a great mistake not to hold the next meeting of the U. S. Bee-keepers' Union at Omaha during the exposition, which opens June 1st and closes Nov. 1st. What do the members of the Executive Committee say to this? The matter should be settled at once."

Although not a member of that committee, I for one would be most heartily in favor of having the Union meet at Omaha. In fact, it seems to me it is the place above all others for 1898. Hurrah for Omaha!

T. S. FORD AND BEE-PARALYSIS.

WE have only just learned that our old friend and correspondent, formerly of Scranton, Miss., died in November last. Mr. Ford had probably had more experience with bee-paralysis than any other man, and his valued contributions in relation to this disease have appeared from time to time in our columns. He had tried all known remedies; had experimented with it—in fact, had his apiary well nigh wiped out two or three times by the disease. His last conclusions, if I remember, were that there is no known cure. He said it would disappear, apparently, of its own accord; and then when he *thought* it had gone for good it would reappear in all its virulence. Such was the peculiar nature of the disease. Mr. Ford had intended to experiment further; but death, it seems, has cut short his work. Mr. Ford was an attorney at law—a bright, practical writer and keen observer,

and by his death our fraternity has lost a valued man.

ENCOURAGEMENT OR FLATTERY.

MR. HUTCHINSON does not believe in the sentiment that "praise to the face is an open disgrace." Among other things that he says, and which I indorse heartily, is this:

When a man dies we forget his faults and remember his virtues, and cover his coffin with flowers. Let us not withhold our flowers and appreciative words until eyes and ears have passed beyond rejoicing.

There is such a thing as bestowing flattery, and there is such a thing as giving needed encouragement when work is well done. The manufacturer knows it is to his interest to praise his men occasionally when they do well. Whenever I hear a good sermon I feel like getting hold of the preacher's hand and telling him so, because I want more sermons like them. In the same way, I know of no reason why the subscribers to a periodical should not encourage an editor whose work is meritorious.

I am not saying this to court praise for myself, even if I deserved it, but as a reason *why* I have taken occasion to speak a good word for the work of my co-laborers in the field of apicultural journalism.

NEW LIFE IN BEE-JOURNALS.

APPARENTLY all the bee-journals have turned over a new leaf for 1898, or rather, perhaps I should say, they are putting new life and energy into their columns. I have already referred to the *Review* and the *American Bee Journal*. Among the others that have taken on a new lease of energy is the progressive *Progressive Bee-keeper* and the *American Bee-keeper*. The first named is now having a series of articles by one of our correspondents, Mr. R. C. Aikin. These articles are reviewed and commented on by G. M. Doolittle; and the two together, in the same issue, make quite racy reading. Somnambulist, as of old, is as bright and spicy as ever; and in the editorial departments Bro. Leahy and Bro. Doolittle make things interesting. The *American Bee-keeper* now has for its editor Mr. H. E. Hill. Whether this is the same Hill who was formerly in Florida, and moved to Pennsylvania, or some other Hill, I can not say; but he is evidently a practical bee-keeper, if I may judge by the editorials over his name. All together the journal seems to have taken on new life and energy. We wish our cotemporaries success and big fat subscription-lists.

THE BLACK RACE CHAMPIONED.

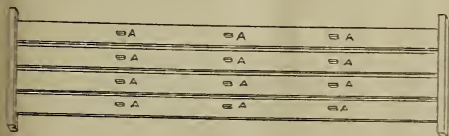
J. E. CRANE, in the *Bee-keepers' Review*, comes out as a "fair-minded champion of the dark race" of bees. He has experimented for some thirty years with blacks and Italians, and in some instances, at least, he finds that the former fill their hives better, and give more surplus, than the latter; and in one instance in particular, although he had robbed his black colonies of a large amount of brood to help along the weaker Italian colonies, it was these same blacks, much to his surprise, that gave him more finished sections than he had ever taken from a colony of pure Italians.

He admits that the yellow bees will secure more light honey, and honey of better quality. But in localities where the honey is dark, or when the season is of such a character as to afford only the dark, the blacks were ahead.

In my travels among bee-keepers I found that the blacks or hybrids are generally used, not because they are cheaper or easier to breed, but because from the hybrids, at least, more honey is obtained; and what honey is secured, if in the comb, is whiter. When I called upon Mr. Elwood I thought he had about the meanest bees (hybrids and blacks) to sting of any bees I had ever felt. But talking about mean bees, I shall have to award the palm to Mr. Coggsall, whose bees I have written up in another column. In our locality, where it is almost exclusively light honey if any, I am sure the Italians give us the best results, or at least the yellow hybrids.

THE J. E. CRANE FENCE.

SOME two months ago Mr. J. E. Crane, of Middlebury, Vt., sent us a sample of a style of fence that he thought might have some merit. The cut below illustrates it.



Mr. Crane believes most heartily in the idea that freer communications from side to side causes better-filled sections; and while the fence that we are making is a good move in that direction, he would go a little further and make it possible for the bees to go *straight across*. To do this he drives wooden pegs about $\frac{1}{8}$ inch thick, $\frac{1}{4}$ inch wide and $\frac{5}{8}$ long through the slats, at the right intervals to abut against the uprights of the sections. There is no question but this fence would give freer communication; but the chief objection to it is that it is rather flimsy, the slats being held *only at the ends*. Mr. L. A. Aspinwall secures, in effect, the same result by the use of tin separators with transverse slots opposite the uprights of the sections, with little cleats above and below the slots to bee-space the separator from the edges or corners of the plain section.

All of these things are worthy of our careful consideration. If the regular fence that we have adopted will secure as good results as the Aspinwall or Crane separator, it will have the advantage of being cheaper, and, to my notion, much stronger. Let the brethren test these ideas thoroughly. In closing, let me say I am of the opinion that Mr. Crane is considering the matter of having his fence patented. And it may be that it would be well worthy of a patent.

HOW THE PLAIN SECTION BRINGS ABOUT NEW CONDITIONS.

MR. ASPINWALL, in the *Bee-keepers' Review*, has another interesting article on the use of plain sections. In speaking of them he says:

Furthermore, greater care must be exercised in handling and crating. If any sections with bulged

edges are found, only one or two, at most, should be put into a case. If placed near the center no abrasion of the cappings need occur when removing them, the first row being the most difficult to remove.

I fear we shall have some complaints in the matter of bulged edges the coming season, especially where imperfectly constructed separators are used.

The plain section will undoubtedly necessitate some changes in shipping-cases. Each section getting closely against the adjoining ones will prevent much if not all drip below, which may possibly prove objectionable, as the honey would be likely to run through an entire row in the event of a single breakage. Even with veneering or heavy paper separators, each one would be swamped in its own leakage. But the plain section, with its many points of excellence, will more than balance the slight objections presented. With well-filled sections and proper handling, no serious breakage need occur. However, I expect to use less expensive cases another season by leaving out the supporting cleats and paper, as well as making other slight changes. In the mean time I trust our supply-manufacturers will anticipate all these things. In a letter from Mr. F. L. Thompson, my attention was called to this requirement. In consideration of low prices, we must have cheaper shipping-cases.

I do believe it is true that the plain section will make it possible to make a cheaper shipping-case than the old-style bee-way, or sections with "ears" on them. But this is a matter that we can all experiment on during the coming season. It is undeniable that the retail and wholesale price of comb honey has been coming down; so also has been the price of supplies. But, if necessary, shipping-cases might be made cheaper still, providing bee-keepers would be content with something less expensive.

THE PLAIN SECTION IN CALIFORNIA; AND THE VALUE OF LARGE HIVES IN CALIFORNIA.

THERE are a good many interesting things that I glean from the report of the California State convention, as published in the *American Bee Journal*. Among others I notice that the plain section was favorably mentioned. Some were exhibited by Geo. W. Brodbeck, who pointed out the fact that they appeared better filled, and that more of them could be packed in a case. Mr. M. H. Mendleson had used the Danzenbaker section, and had had such excellent success in producing first-class honey that he proposed to use them exclusively in the future.

But the part of the report that interested me more particularly was that regarding the best bee-hive. There are only a few lines, comparatively, relating to this discussion; but, if I read correctly between the lines, there was a good deal more said on the subject, and I therefore wish I could have heard the whole in convention. Mr. McIntyre had used ten-frame hives, but had recently introduced into his apiary 60 twelve-framers, and prefers them to the tens. This preference is based on the fact that, when this twelve-frame width is used three stories high, it will have a "tendency to give the queen the highest capacity for brood-rearing, and for the prevention of swarming."

A twelve-framer three stories high! Whew-ation! I should think it *would* have a tendency to accomplish the result stated. As our readers know, my experience seems to show that the two and three story colonies give the best results in honey, and manifest the least disposition to swarm. About all the swarming we had at our out-yard last season

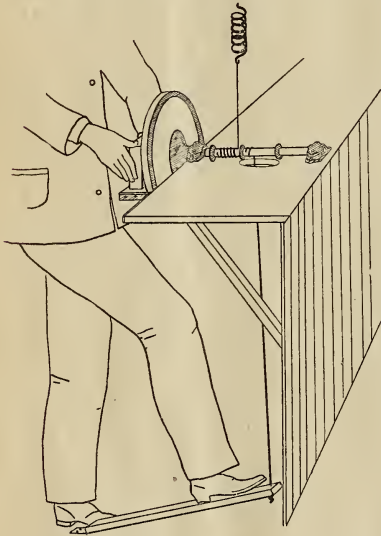
was from the single-story colonies. The double and triple deckers kept right on minding their business. Perhaps you add, "How do you know they did not swarm?" In the first place, I visited them often; and if there had been any considerable reduction in strength in any of these colonies, I am quite certain I should have known it. In the second place, the wings of the queens were clipped, or, if not clipped, perforated zinc was placed over the entrance. As the original queens were with the big colonies at the close of the season, I am positive they did not swarm.

I may be mistaken, but it seems to me that the best solution of non-swarmering at out-yards is rousing big colonies and unlimited room for the queen to lay in the brood-combs.

But in order to get *comb honey* we shall have to unlearn some of our old notions, and adapt ourselves to new ones, I suspect. I should very much like to hear from those who have had experience "along these lines," as Doolittle would say.

THE SEE-SAW SECTION-CLEANER.

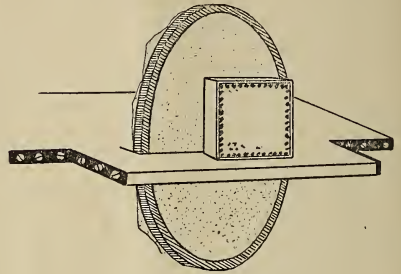
ON page 100 I said that I had a machine (in my head) that embodied all the good points of the other machines illustrated in our columns, and that (in my head) it would clean



faster and better than either. Our departments have been so very much rushed with orders for regular goods that our men have not found time to carry out my idea, but I finally had our artist put it on paper, and here it is.

It is almost self-explanatory. A shaft is mounted in two boxes, and on the end of the shaft is a flange. To this flange is secured a wooden wheel. On the face of the wheel is a circular piece of sandpaper held in position by an iron band that binds the sandpaper around the periphery of the wheel. The view at the top of the next column shows the section just before the sand-wheel, and also how the sandpaper is secured by the band.

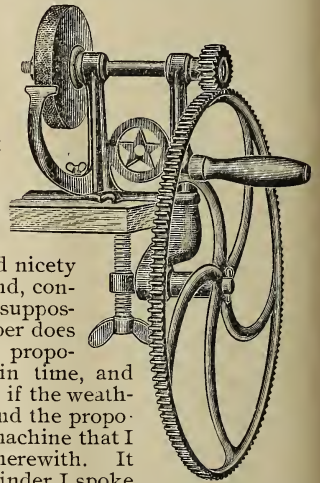
As the usual forms of foot power of continuous motion are somewhat expensive, I make use of the principle adopted by our forefathers in their old-fashioned turning-lathes. A spiral spring is attached to the ceiling over-



head. To this is attached a stout cord which winds around the shaft of the mandrel a few times. Another cord, running spirally around the shaft in the opposite direction, is attached to a foot lever. The pressure of the foot unwinds one cord and winds up the other, causing rapid rotation back and forth. The method of operation is simply to put the section against the wheel as the disk revolves one way and the other. The thought occurred to me that this reciprocal motion would permit the propolis to get out of the way better than if the wheel revolved in one direction only.

Later.—Since writing the preceding lines I have been trying a *continuously* revolving disk, somewhat on the plan of the one shown above. I was agreeably surprised, both at the rapidity and nicety of the work; and, contrary to what I supposed, the sandpaper does not fill up with propolis. It might in time, and probably would if the weather were warm and the propolis soft. The machine that I tried is shown herewith. It is the emery grinder I spoke of in our last issue, and which I thought, by a slight change, would make a section-cleaner for a small amount of money. In the test above mentioned we removed the emery wheel and in its place put a wooden wheel of larger diameter, and thick enough so the nut would be below the surface of the wheel. Over the face was stretched sandpaper.

In the test I used the dirtiest sections we could find, smeared with propolis, and badly stained. It removed both the propolis and the *stain*, and will beat hand scraping with a knife two to one. What is of importance is, it does the work so much more thoroughly. For prices, see Special Notices.





Feb. 12.—The fog, mentioned in my last, delayed the starting of the steamer, and also cut off the view when it did start, so that I got only a glimpse of the top of the Goddess of Liberty, that colossal statue from Bartholdi, and I also missed the sights all the way out of New York harbor. Mrs. Root has objected to the location of our home because we are so near two railways that the whistling keeps her awake nights. I wonder what she would think if she could hear the chorus of whistles, fog-horns, and bells from the craft of all sorts that were swamped in that fog. It was a perfect Babel, or bedlam of unearthly noises and shrieks. While we skewed our eyes in the direction the strange sounds seemed to come from, the mist would occasionally lift a little, and a dim phantom of something that might be another steamer loomed up right in our track. It was like jostling through the crowd on Broadway, only it was great boats and ships that jostled instead of people. Thus we worked along until opposite Coney Island, then the pilot said he *must* see the landmarks or the boat would run out of the channel and get stuck in the mud. There was nothing to do but to stand still and wait for the fog to lift. Toward night we got out around Sandy Hook, and for the first time in my life I was on the great ocean, out of sight of land.

One after another began to get seasick; but I was all right until after dark, and even then I stayed out in the air as most advised, until, chilled and dizzy, I sought my berth. Sleep, in much mercy, came soon, and at dawn I was rejoicing, and up and dressed to see the sun rise out of the water. My rejoicing didn't last long; neither was I *happy* when the sun rose. I talked with other sufferers, and we tried all sorts of plans. When it seemed as if I could not stand the anguish, I wiped my weeping eyes (and mouth), and my little prayer, "Lord, help," burst forth almost of itself. I remember feeling my utter helplessness as well as my insignificance as a mere speck in that wide watery expanse of sea and sky. I tried to be brave, and to bear it as thousands of others have had to bear it; but I was completely vanquished, and wept like a little child amid the war of the elements. Then I remembered, and clung to it as a ray of hope, "Even the very hairs of your head are all numbered," and the cheering words that follow. Something suggested that I go back to my berth. I crawled in as best I could, and, after lying still a moment, memory or something else brought vividly to mind the words, "Be still, and know that I am God." Most gladly did I heed the voice, and very soon my suffering gave place to joy and praise to God. I soon made a discovery. So long as I kept my head down as low as the rest of my body, and kept perfectly still, I was in comparative peace. Dear reader, I kept right there all that day and nearly all of the

next; and instead of being miserable I was quite happy. I felt a kind of trust and peace I had not known before. A disjointed fragment or two fragments of a hymn expressed better than any thing else what I felt:

My Savior comes and walks with me,
And sweet communion here have we;
He gently leads me by the hand;
And all my night has passed away.

The last line didn't rhyme, it is true; but the sentiment did just then exactly. The steward and room-mate were exceedingly kind. As we neared Bermuda the steward brought me everything the steamer afforded, and declared he was paid to make it his business to do all in their power for seasick passengers. Out of 205, perhaps 25 or 30 were as badly off as myself. In my case, if I even tried to prop myself up with pillows the sickness came back. I could not even read, most of the time; I could not swallow any food—not even a cup of tea. It seemed to be God's will that I should be *still*, and rest; and I enjoyed obeying, to the very letter. All the winter I have been unable to bear any kind of chilly wind; but I soon found I could open the window in my berth, lie right in a strong breeze, even in my shirt-sleeves, without taking any cold at all. From this it seems we have another proof that exposure to a draft need not cause one to take cold, if the stomach and digestive apparatus are in good order. A doctor in Portland, Oregon, once told me if I would go out on the ocean and get thoroughly seasick it would do me more permanent good than any medicine. Is not seasickness one of *Nature's* remedies?

I did not know we were nearing Bermuda until I saw floating seaweed out of my narrow window. When we got into calm water I arose and found I could stand and walk with a clear head but rather feeble knees. The sight of Bermuda somehow linked itself with "Beulah Land;" and now as I write, after having spent one day in rambling over it with my wheel, in company with my good friend W. K. Morrison, I still cling to the illusion.

The dainty gardens scattered here and there wherever enough fertile soil can be found between the rocks are all my imagination had pictured them. The colored people who tend them are unusually intelligent everywhere, and seem very happy in their neat white houses made of the coral rock. The houses are all stone, and all of this one kind of stone, *roof and all*. Then they are all whitewashed regularly, roof and all. A frost is never known here. The whitewash never comes off. I have made several discoveries already. All the water used here is rain water. It falls on the whitewashed stone roof. The cisterns are all of this same stone, and whitewashed with Portland cement.* The water is remarkably

*When we first came near the island I noticed what I called fields of some crop covered with canvas; but as frosts are unknown here, neither I nor any on the steamer could imagine what they were for. Mr. Morrison explains that near the military buildings, where they need more rain water than falls from the roofs, they smooth off the coral rock on an incline, then whitewash it so as to be impervious to rain, then catch the water as from a roof, conduct into stone tanks, and thus have a supply. The large hotels have a similar arrangement.

pure, and always contains a trace of limewater from the whitewashed roofs. Babies are often given limewater for sour stomach. Babies and everybody else have it here—the faint trace of lime in the drinking-water, and *not* the sour stomach. See?

The coral roads for wheel-riding, curving gracefully in and among the gardens, up and down just enough for nice riding, are beyond anything I can describe. The songs of the birds, the gorgeous flowers, beyond anything I supposed the world contained—is that last too strong? Well, friend M. showed me one plant this afternoon that *is* finer than anything I ever expected to find on the whole earth. It is called a "Bougainvillea." It was spreading over a veranda, and the masses of bloom were of such startling and *entrancing* brilliancy as to hold one's gaze when his eye caught on to it a quarter of a mile away. This mass of bloom from the *one plant* would almost make a load for a common hay-rack.

One thing more: All the onions grown in Bermuda are transplanted on the plan of the "new onion culture," and have been for ages past. They never raise them in any other way. Strawberries are only(?) 60 cts. a quart, and they can be grown nine months in the year.

Most of the people here attend church, and there is very little sabbath-breaking unless it is by rich people who come here from New York. We are a mile from town, among the gardens. This place is called "Sunnyside." On the hill above is "Sunny Land;" and over further is "Happy Valley." The name is right, for there are more happy hills and valleys here than anywhere else in the world, I do believe; and one reason is that the people are almost all colored. They are fairly well educated, nearly all Christians, and have pretty homes, and are all hard-working people, or nearly all. They are protected and respected by Queen Victoria, and seem in many respects very much different from the colored people in America. A good many of the gardeners are Portuguese, and a bright little Portuguese girl is chattering to me now, and showing me the presents she got at school. This is a new world, full of strange things. The most beautiful and luscious muskmelon I ever tasted grew on a *tree* in the yard, and the tree is full of them, from little green ones to big ripe yellow ones, and this right in winter time too. There is very little wood here, so the houses are all made of stone, and the fences too. The houses and fences are as white as clean white sheets on washing-days. Nobody here ever saw any frost, snow, or ice. Nobody need lock the doors nights here, as stealing is so rare. There is almost no crime, for the culprit could not get off the island, neither could he hide where the Queen's soldiers could not find him. Nearly all the intemperance is among the rich people who come from New York.

To my Sunday-school class:

SUNNYLAND, BERMUDA, Feb. 14, 1898.

Dear Boys:—I shall give you only a brief sketch this morning of the wonderful things

in this land of perpetual summer. The houses here have no chimneys. The cooking is all done on oil-stoves. The fences are all coral rock, and one could almost run a wheel on top of many of them. When the dog runs out to bark at people he goes along the top of the fence. The trees, grass, flowers, and every thing, are all unlike Medina. Oleander-trees grow wild every where; and the finest melon I ever ate was picked from a tree, and there were great clusters of green and ripe melons left on the tree. There are many fruits I never saw or heard of before. I have not yet tasted them all. I picked out four limes (a kind of lemon) at a fruit-stand, and held out some money (for I have not yet learned the names of all the coins), and the man said a penny (a big cent) was the price. Just think—*four* lemons for a cent! The money here is half-pennies, pennies, twopence, threepence (silver), sixpence, and shilling. A shilling is about like our quarter.

Last Saturday we went out several miles on our wheels, and came to a place called "Devil's Hole." I don't like the name, but my companion said we were to stop there. It was a sort of rocky inclosure, and over the gate it read, "Admittance one shilling." Inside were three little ponds of water—one very shallow, with the bottom white sand. In this one were the "angel fish," perhaps the handsomest living thing in the whole round of living and moving creation. Imagine the most beautiful goldfish, with glittering penciled scales, and of almost all the tints of the rainbow. As if this were not enough, God has given the beautiful creature long flowing fins, like unto angels' wings (or what they are supposed to be like), and then added to all a grace of motion that can not well be described. These fish won't live in aquariums, they say, so they can be seen only here. What a contrast, to think of finding *such* a creature in "Devil's Hole"! But right in with the angel fish is an octopus, a hideous creature with long sprawling arms or feelers (tentacles), and with an evil, vindictive-looking eye that might well give the name to the place. He turned on us wra'hfully, and then went straggling off with his ungainly form as well out of sight as he could get. When he is real mad he spits out "ink" that darkens the clear sea-water, so his enemy can not find him.

The next inclosure was deeper; but the third and largest one was from 50 to 75 feet deep, and perhaps as large as our church, yet we could see clear to the bottom whenever the great fish would let the water be still enough. There were in this larger pond almost all kinds of fish found in the sea—some of them as big as a good-sized boy. They came around us like a lot of hungry chickens; and when I wanted to see them fed, the guide said a boy would get a loaf of bread up at the grocery if I would give him some money. Now, that loaf of bread cost only "tuppence," but it gave the fish and myself more real satisfaction than I ever got out of so small a sum of money before. You see we had been wheel-riding, and it was toward night. I tell you, boys, they know how to make good bread over here.

The fish thought so, for they made more racket than a lot of hungry cows in a barnyard. They would jump clear out of the water, and snap their jaws with a tremendous "clap."

"Oh!" said I, "you have got one big dead fish down there. Do many of them die in here?"

When the guard said he was only taking a nap, I thought he was joking; but he got a stick, and said, "You just watch now. If he hasn't got done with his nap he will come back and lie down in the same place and finish it."

Now, boys, when he poked him a little he was as lively as any fish in the lot; but pretty soon he came back to his favorite spot, turned over on his side, folded his hands ("fins"), shut his eyes, and was a dead fish again.

From your teacher,

A. I. ROOT.



Our customers will help us considerably, and facilitate the handling of their orders, if they will use our order-sheets. If you are out of order-sheets and our addressed envelopes, just send a postal-card request for more.

THE EMERY GRINDER AND SECTION-CLEANER.

We can furnish the emery grinder shown elsewhere for only \$1.50, or with sand-wheel and one-half dozen sheets of sandpaper for \$2.25. While we don't guarantee that as a section-cleaner it will be a complete success, yet at the price asked there will be no great loss, for it is certainly a success as an emery grinder, for thousands and thousands of them have been sold.

MAPLE SUGAR AND SYRUP.

We have already received a small lot of new sugar, and within a week shall probably have plenty of both sugar and syrup. We can furnish new syrup, first run, at 85c per gal.; 10-gal. lots at 80c; larger quantities quoted on application. New sugar, 9, 8, and 7c respectively, for first, second, and third grades; $\frac{1}{2}$ c per lb. less in lots of 50 lbs. or more.

BUSINESS AT THIS DATE.

Orders are not abating any in number and size, and there seems little prospect of our disposing of the accumulation of orders and taking care of new ones without redoubling our efforts. We begin this week to run our wood-working shop 22 hours of the 24 with a double turn of men; and by adding to the present large force of those who are packing and shipping the goods we hope by the end of this month to be in better shape to take care of orders promptly. If our friends will have patience we will do our best to serve you.

CARLOAD SHIPMENTS.

During the past month we have shipped eleven full carloads of bee-keepers' supplies, besides several of boxes. One car, the second for the season, went to D. M. Edwards, Uvalde, Tex.; one to Jno. Nebel & Son, High Hill, Mo., and one to Vickery Bros., Evansville, Ind. One car has gone to each of the branch houses at Chicago, Philadelphia, and Syracuse, N. Y.; one to M. H. Hunt, Bell Branch, Mich., and the second car to Walter S. Pouder, Indianapolis. Two carloads were made up of shipments for Australia and New Zealand, and one car of shipments for Jamaica, Cuba, and other West Indian and European ports. As we go to press we are loading the first car for Geo. E. Hilton, Fremont, Mich., to be followed by one for O. P. Hyde & Son, Hutto, Texas. Orders are in for five more cars for export as well as for ten or twelve cars for different points in this country. Most of our less than carload orders are filled within a week or less after we receive them. In a few cases, when something special or odd-sized is called for it is delayed a little longer.

Special Notices by A. I. Root.

YELLOW ONION-SETS.

On account of the scarcity, and advance in price, we can not furnish them at the prices given in our list after this date. The best present price is 20 cts. a quart; \$1.00 a peck; \$3.50 per bushel, and this price is subject to change without notice. We still have plenty of Prizetaker, White Multiplier, American Pearl, and Silverskin, at the same price given above for onion-sets.

TOP ONION-SETS.

So many of the friends have wanted just a few of the top onion-sets described on page 151 that we have decided to offer them, just a few for trial, postpaid for 5 cts. a dozen. The great point in their favor, so far as my experience goes, is that they are the best-keeping onion, both onions and sets, of any thing I have ever got hold of before.

A NEW ONION, BURPEE'S GIBRALTAR.

Our friends will remember that I described this onion last October, on my visit to friends Greiner and Weckesser. There was a perfect stand of great beautiful onions, all exactly alike. While in size they may not have been much larger than any thing I have ever seen before, the seed must have been an extra strain. I have just purchased from Burpee a limited quantity of seed which I believe will produce the same onion. For the present season the supply of seed is so limited it can be sold only at 10 cts. a pack, or 25 cts. an ounce, postpaid by mail. I think it will pay every one who has a garden to give it at least a trial. Burpee has fixed the price at 10 cts. per packet; so if you want 5 cents' worth only, two of you will have to club together.

HOME AGAIN.

Here I am, friends, once more, this last day of February, on hand ready to serve you. In our next I shall have something more to say about high-pressure gardening in the island of Bermuda; and you want to have at least a peck of Triumph potatoes, either white or red, ready to plant at the proper time. The Triumph is almost the only potato used in Bermuda. It is gratifying to know that they endorse my opinion, to the effect that the Triumph is the best extra-early potato before the world. Of course, the Triumph is the same thing as what we call the White Bliss, only it is red instead of white. And you want to have some good onion-plants ready to try their method of transplanting. In fact, they have been transplanting all their onions for the past *hundred years*, and yet here in America we have been calling it the "*new*" onion culture." The onion, above all others they have settled down to, is the Bermuda onion seed, grown especially for them on Teneriffe Island. As the seed has been scarce this season I was unable to get even a pinch of the genuine Teneriffe seed. Well, I think I can find some among our New York or Philadelphia seedsmen. In Bermuda this season they paid as much as \$4.00 a pound for it. I expect to be able to offer the genuine Teneriffe for about 25 or 30 cts. an ounce. As it ought to be planted now, or at least some time this month (under glass) I will be prepared to fill orders about the time they reach us. The Bermuda system of heavy cropping will be all right for America where ground is high-priced, say in the vicinity of towns and large cities, and where you want to make every inch of ground count. During the past year, \$10,000 worth of stuff was sold from only *six acres*, so a man on board the steamer told me. What do you think of that for "high pressure"?

MUST THERE BE WAR?

The sermon of our good pastor, given in our issue for Jan. 15th, on "The Gospel of Arbitration," came, it seems, at a most opportune moment. Little did he or I dream at the time just how soon such a sermon would be greatly needed.

MISS FRANCES E. WILLARD.

The Outlook says, "The death of no other woman in the whole world, with possibly one exception, could have produced so widespread and profound a sorrow as was produced by the death of Miss Frances E. Willard." Now, who is that other woman, do you suppose? Queen Victoria.

A Woman Florist.

5

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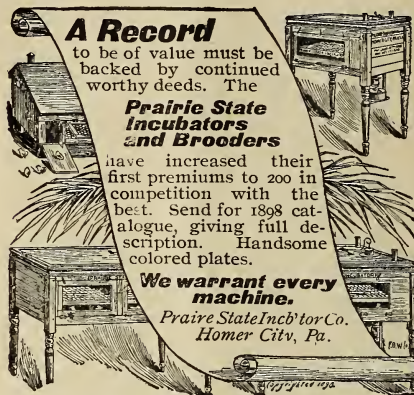
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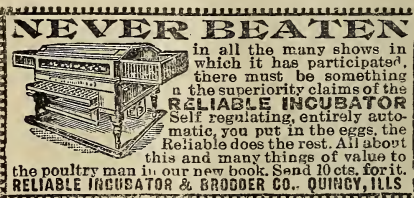
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